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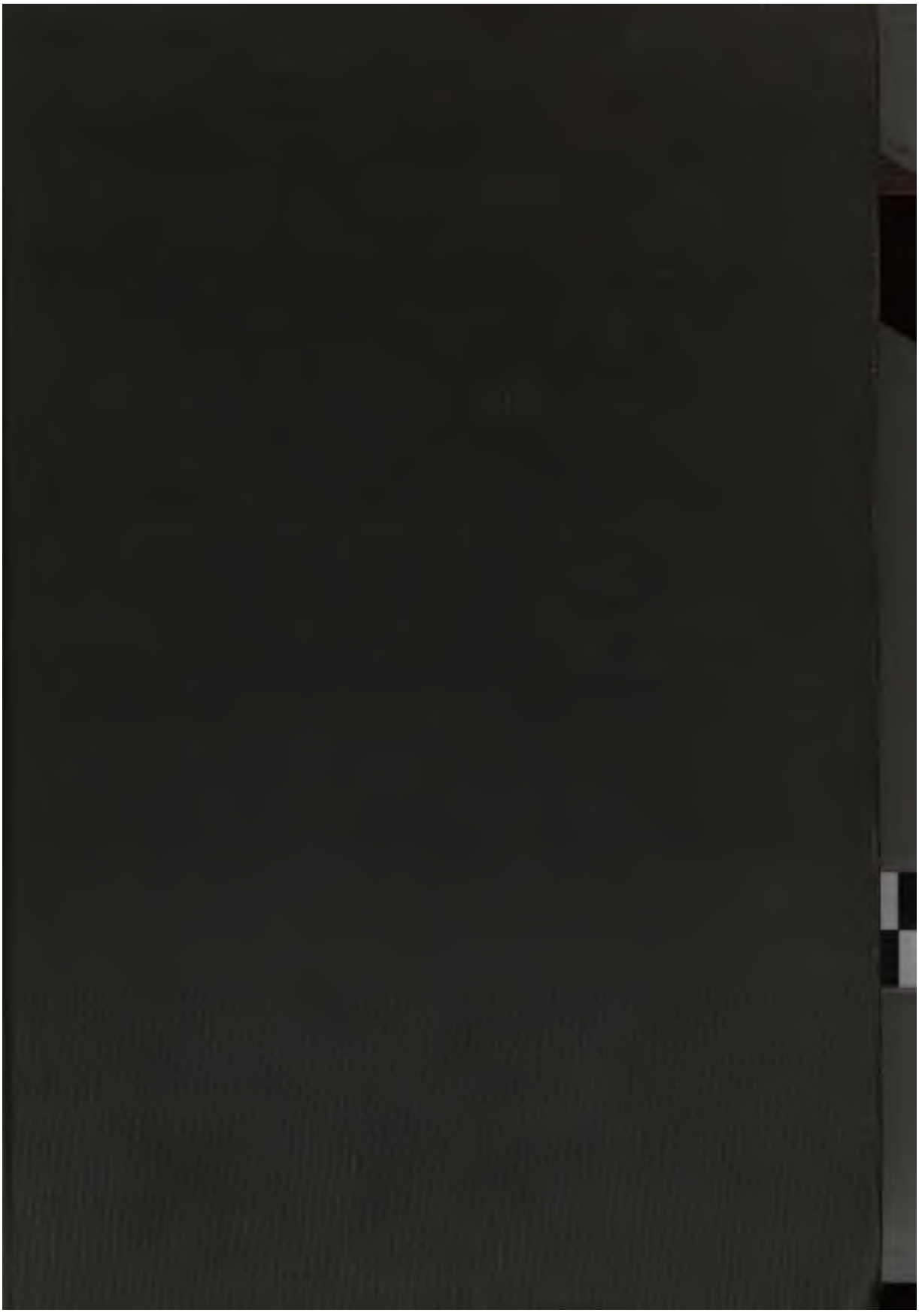

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VOYAGES ON THE YUKON AND ITS TRIBUTARIES

BOOKS BY HUDSON STUCK, D.D., F.R.G.S.

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The "Pelican" reaching Eagle

VOYAGES ON THE YUKON AND ITS TRIBUTARIES

A NARRATIVE OF SUMMER TRAVEL IN THE INTERIOR OF ALASKA

BY

HUDSON STUCK, D.D., F.R.G.S.

AUTHOR OF

"THE ASCENT OF DENALI (MT. McKINLEY)," "TEN THOUSAND MILES WITH A DOG SLED," ETC.

WITH MAPS AND ILLUSTRATIONS

NEW YORK

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1917

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Published November, 1917

To

WALTER HARPER

ARTHUR WRIGHT

AND

JOHN FREDSON

NATIVE ALASKAN YOUTHS, WHO DURING THE PAST
TEN YEARS HAVE BEEN
ENGINEERS AND PILOTS OF THE LAUNCH

"PELICAN"

AS WELL AS DOG-DRIVERS AND TRAIL ATTENDANTS
ON MANY THOUSAND MILES
OF THE AUTHOR'S WINTER JOURNEYS

THIS BOOK

IS DEDICATED IN AFFECTIONATE
ACKNOWLEDGMENT OF FAITHFUL AND
KINDLY SERVICE

PREFACE

A PREFACE is useful, if it be useful at all, in conveying to the reader some fuller notion of the nature of the book he holds in his hand than the brevity of the title-page permits, so that he may have guidance as to whether it be worth his reading or not.

This book, then, while quite complete in itself, is written as supplement and complement to "Ten Thousand Miles with a Dog-Sled," and forms therewith a survey of the interior of Alaska under the totally different aspects of winter and summer. In winter one travels with the dog team almost wherever one wishes; summer travel is confined to the waterways with which interior Alaska is so liberally supplied; so that a book on river voyages may really deal with the whole country so far as the summer is concerned.

Since this book may have readers its predecessor had not, it is well to explain that it is a sober attempt to describe the country and its people, without any ulterior ends whatever. It has no drum-and-trumpet purpose; it does not boost and boom; it is no "Nation in the Making" book, no "Frontier Wonderland" book; it owes no inspiration to chambers of commerce or allegiance to railway propagandists, official or otherwise. It does not "leap from crag to crag with loud and jocund shout" along the Yukon River nor sound the loud timbrel o'er

Bering's dark sea. Such tasks may safely be left to the visiting journalists, of whose books on Alaska there is plentiful supply.

It is now thirteen years since the author began his residence in the interior of Alaska, and by far the greater part of the time of that residence has been spent in almost continual travel. The present season is the tenth during which the launch *Pelican* has traversed the waters of the Yukon and its tributaries, and the total distance she has covered is close upon thirty thousand miles.

The original plan of the book contemplated the transcription of a series of journeys from the log of the launch and the author's diaries, in much the way that "Ten Thousand Miles with a Dog-Sled" was composed, and the title was determined upon at that time. But when the plan came to the execution the author found that the subject did not readily lend itself to such treatment.

He has therefore preferred to take the reader right down the Yukon River from its source to its mouth without much specific reference to the voyages of the *Pelican*, and this journey constitutes the first part of the book.

The journeys which the second part of the book describes were made on the Alaskan rivers tributary to the Yukon, the "side streams" as they are generally called by river men, though they are themselves great rivers, and a chapter is devoted to each of the more important ones. All of these streams except the Chandalar have been traversed again and again by the launch, and in-

cidents are often culled from several such journeys and incorporated in the one which the reader is invited to take.

Here, as indeed throughout the book, the author has availed himself of any sources of information to his hand that might add to the interest of the description, but his own diaries have been the chief source because it has long been his habit to note therein whatever attracted his attention of local history or tradition as well as the details of voyages. In the extraction and digestion of such notes care has been exercised to verify and supplement what has been given of dates and circumstances of record, and in the course thereof he has read over again, he believes, every published account of Alaskan exploration except the Russian.

It has been borne in mind, however, that the chief purpose of this book is a narrative that should interest the general reader and convey a just impression of the country and its inhabitants, and in some cases a brief sentence, a date or a name, may be all that stands for hours of such reading, or there may stand nothing at all.

Scientific instruments, such as thermometers and barometers, are said to be least reliable at the extremes of their scales; so it may be said that what a man writes is least valuable when he is writing up to the limit of what he knows, and lessens in value as it approaches that limit. It follows that to deal thoroughly with the literature of any subject it is not only necessary to read a great deal, but it is also necessary to be content not to use a great deal that is read.

The exigencies of authorship at a point within the Arctic regions, in the absence of all books save the common books of general reference and such special books of the north as he has diligently collected in the last few years, may perhaps plead the author's excuse for some of the faults he is quite conscious the book contains; the intervention of a winter-sled journey of three months' duration between the despatch of the first part to the printer and the writing of the second, so that in the writing of the second he has been unable to refresh his memory of the first, may account for some lack of co-ordination, some repetition, which he fears a careful examination will disclose; while the unfortunate circumstance that he is so situated that he cannot read a paged proof of the book without delaying its publication for a whole year, he asks may be remembered should the volume not match the record of its predecessor in being free from printer's errors, and, in particular, should the reader be annoyed, as the author is always annoyed, by finding illustrations not placed against the text they are intended to illustrate.

Here, with submission to the reader, is no apology for scamped or hasty work—there can be no apology for offering such to the world; the book has been prepared with all possible care, has been written and rewritten; but there are several particulars in which the author would have been glad to be more precise, or more positively assured, had the means been at his command.

The author has no apology to offer for the freedom with which he has expressed his opinions on many mat-

ters which engage his interest and concern; he has had opportunity for careful observation and reflection and they are not hasty or ill-considered. The reader will make his own estimate of their worth.

Beyond his obligations to the authors he has cited in the text the present writer has no acknowledgments of literary assistance to make, save to a lady in New York who presents the admirable and very rare combination of a highly cultivated woman and an expert stenographer and machine-writer. The care she has bestowed upon his manuscript is of the kind that fees cannot compensate, and as one who, in his time, has suffered many things of many stenographers, he offers his grateful thanks to Mrs. Kathleen Hore.

But if this be the only obligation of a literary nature under which he labours, there is another obligation, without which the book could not have been written at all; and for leisure and convenience for writing even amidst the disturbance of removal from a house undermined by the encroaching waters of the Yukon River, for every possible assistance and relief of a domestic kind, the author is profoundly grateful to Doctor Grafton Burke, the medical missionary at Fort Yukon, and in even higher degree to Mrs. Burke; and here makes affectionate acknowledgment to them both.

FORT YUKON, ALASKA,
June, 1917.

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PART I

VOYAGES ON THE YUKON

INTRODUCTORY CHAPTER

THE headwaters of the Yukon, down which river this book purposes to conduct the visitor, are reached by a sea and land journey of the utmost picturesque interest. Starting from Seattle or Vancouver, the usual points of departure, the steamboat threads for a thousand miles a maze of channels between islands and the mainland, known as the "Inside Passage," with no more than two or three places where the open swell of the Pacific Ocean is encountered, and there but briefly.

There are three and only three such sea passages in the world: along the Norwegian coast, along the coast of Chile in extreme South America, and this Inside Passage of the British Columbia and Alaska coast. In all of them a multitude of islands gives shelter from the ocean swell, and in all of them scenery of the boldest and wildest description lines the whole route, for in all of them the coast is a submerged mountain range, the valleys being the channels, and the tops of the mountains the islands.

I have not found a comparison of these passages by any one who has seen all three of them, but there

are many who have visited both the Norwegian and Alaskan coasts, and the consensus of their opinion would probably give the palm to the Scandinavian scenery for its more varied charm and the much higher latitude into which it ascends. The Norwegian shore is very well known and has been described a great many times. The best description which I know of the Chilean coast is in Sir Martin Conway's book, "Aconcagua and Tierra del Fuego," and he considers it as yielding in interest to the coast of Norway. But as he sketches that rugged, precipitous, forested coast, threaded with waterfalls and gashed with glaciers, of Messier Channel and Smyth Channel to the Straits of Magellan, the parallel with the Alaskan coast grows more and more striking. Pages of his vivid description might be transcribed without the alteration of a word and would serve as an admirable general account of the Inside Passage. The Alaskan coast is not wrapped in such constant gloom and cloud, though at times it can be foggy enough, and it has far greater interest of picturesque native population, as well as the mining and fishing enterprises of white men, with thriving towns and settlements, which the South American coast wholly lacks, but the physical characteristics are virtually the same.

There is no gain, however, in attempting to set up a rivalry between the attractions of different places, and appraising the comparative picturesque value of this and that feature, as I have heard men do between the Alps and the Rockies, for instance. It will generally be found that they who are really appreciative of the

THE INSIDE PASSAGE.

one, become upon acquaintance most highly appreciative of the other, and certainly they whose love of noble wild prospects has led them across the Atlantic to the Norwegian fiords, will be they who find the greatest delight in the Inside Passage.

Even its most enthusiastic admirers, however, must be willing to admit a certain monotony in a continuous thousand miles of scenery all of the same kind. "Always fine, no doubt, but always fine in the same way," as Conway writes of Smyth Channel. It is therefore well that the Inside Passage possesses other than merely picturesque interest; that it has historic interest; and the traveller is well advised who provides himself with books in which the history of these parts is set forth.

We are on the track of the great navigators of the eighteenth century as we pass through these waters, on the track of the two greatest of them all, Captain James Cook and Captain George Vancouver, and if the voyage be extended to the westward before or after the river journey is made, as is often done now, the track of still another will be crossed—Vitus Bering. It will add immensely to the interest of the trip if the work of these bold seamen be understood and followed. Especially is this the case with George Vancouver. From Puget Sound to the Lynn Canal—that is to say, the whole stretch of the Inside Passage—the whole coast teems with the names that he applied. Cook's "Voyages" may be had in many editions, but Vancouver's "Voyages" are long out of print and very expensive. I cannot

understand why in this day of cheap reprints no one has republished Vancouver's "Voyages." However, Professor Meaney of the University of Washington has issued a most careful and painstaking volume* in which he has traced Vancouver's names over a considerable portion of the coast and has incorporated almost one volume of the "Voyages" into his text, with elucidating notes and many illustrations. It is a thoroughly modest and scholarly piece of work and should be in the possession of every intelligent visitor. If in another edition the work could be extended and the same care given to the remainder of the coast, with some notice of Postlock and Dixon and Meares, the whole would constitute a complete historical commentary of the coast that would satisfy the needs of the cultured traveller. The "Coast Pilot," with detailed charts, may be had in Seattle for fifty cents, and is also an interesting companion to the voyager. Another government publication, that may be had for a like amount if not indeed for the asking, "The Geographical Dictionary of Alaska," will answer correctly many a question concerning the origin and meaning of names, both on the coast and on the Yukon, that steamboat captains and others to whom they are commonly addressed are unable to answer.

If instead of the latest "best-selling" trash, and a pile of trumpery ten-cent magazines, the visitor will thus provide himself, he will carry away with him a much more graphic recollection of what he has seen, and will find that he has added to his permanent knowl-

*Vancouver's "Discovery of Puget's Sound" (The Macmillan Co.).

edge of the history and geography of his country—which is worth while, even on a holiday trip.

It does not lie within the compass of the present book to provide an itinerary of the sea voyage, but since nearly all those who visit the Yukon approach it by way of the Inside Passage, it has not been thought out of place to say a few words about it.

Given fine weather, it is a wonderfully impressive journey. The memory of its placid waterways, the savage majesty of its towering mountains, the mystery of its innumerable gloomy inlets, the gleam of its lofty snow-fields and the blue ice of the sinuous glaciers that drain them down to the water's edge, the dense, dark luxuriance of the velvety forests threaded with the living silver of the waterfalls, will long remain to gladden the mind's eye of him who has intelligently observed them. Nor will the uncouth pageantry of the native monuments be readily forgotten, the gules and vert and azure of primitive heraldry displayed in the totems or clan ensigns that were erected in front of their dwellings; grotesque animal carvings gaudily painted, but often rendered with an admirable vigour, and more significant certainly, than much of the modern heraldry of note-paper and teaspoons. Those who are interested in that significance may obtain from a clergyman at Wrangel a pamphlet with a popular exposition thereof, or they may send to the Smithsonian Institution at Washington and procure long and learned monographs. The totem-poles are rotting away in the rank wetness of the climate and no more are made to-day; for the Thlinkets

have been educated out of regard for their ancestors by teachers who for the most part had no ancestors and therefore cannot see anything but heathenism in distinctions of family descent. There is no scorn more withering than the scorn of a man who does not know who his grandfathers were, for "the pomp of heraldry."

The steam-roller of our civilisation is slowly passing over these people and flattening out any picturesque prominence of custom and costume into the dead level of modern uniformity. Those who would see what yet remains of the dignity and parade of savage life, of massive-timbered communal houses flanked and surrounded by the bold blazonry of eagle and whale, of bear and wolf and beaver, of gorgeous and grotesque ceremonial dress and accoutrement, must not linger. It is nearly gone now.

These Indians of the southeastern coast of Alaska, and of the coast of British Columbia, had advanced much further in the arts and in the organisation of life than the Indians of the interior of Alaska, with whom we shall come into contact presently. A kindlier climate had given them greater opportunity; it is highly probable that impulses from the more developed races of the Orient had come to them from time to time in the shape of castaways blown right across the Pacific to these shores. Copper they knew and used with much skill, obtaining it by barter from tribes farther to the north who picked up the "float" in the beds of the rivers. They had marched some stages in the path of racial development, and one dreams that they might

have been led along that path, retaining what they had themselves so painfully gained, into a civilisation that should have been their own. The ferocity of their warlike nature tamed (as it was tamed) by Christianity, its enterprise, its ingenuity, its skill, its boldness and courage, might have been drawn into channels that would have given them some distinctive place in the world, however small, instead of being merely merged and lost in the slush of black-and-tan humanity that fringes the tide of the white man's civilisation wherever he goes.

It is only a dream: others have doubtless dreamed it, but I do not know of any place in the world where such a dream has been realised. I think "Father Duncan" of Metlahkahtla had some such dream, but after a life-long struggle, circumstances have been too strong for him. What he has accomplished he has accomplished, and there are few living whose memories go far enough back to grasp the whole of it, but his plan of a separate people, kept distinct from intrusion and themselves kept from intruding, working out their own future on their own island, has already lapsed. The fate of these seacoast Indians is not in much doubt.

Another element of interest the Inside Passage has, that will appeal with more force to most visitors than regrets over the passing of picturesque barbarians, and that is the glimpse which from time to time is afforded of the permanent occupation of the country and utilisation of its resources by the white man. The numer-

ous and ever-increasing canneries where the spoil of the sea is taken with a lavishness that justifies itself by complacently assuming the spoil to be inexhaustible, yield an annual revenue to British Columbia operators alone of fourteen million dollars, as I read in the *Atlantic Monthly* the other day, and the Alaskan coast is quite as thickly studded with them.

But the centre of interest so far as this permanent occupation is concerned is Juneau, where quartz gold-mining on so prodigious a scale is under way that it is confidently predicted by the engineers that in a few more years this district will be second only to the South African Rand in the amount of its production; with bodies of ore of sufficient known extent to maintain the production for a century. Within a radius of a few miles from Juneau, on both sides of the Gastineau Channel, are to-day gathered nearly a third of all the white population of Alaska.

The visitor who passes along this coast, and then goes to the westward and sees the towns of Prince William's Sound and Cook's Inlet, will have seen what Alaska has to show of permanent white settlement. In all the vast interior there is as yet no white settlement that does not depend directly or indirectly upon placer gold-mining, and nothing that depends on placer-mining can be called permanent.

The sea voyage begins with Vancouver and ends with Vancouver and never gets away from Vancouver's courses and Vancouver's names. His charts were still in use in these waters a decade or so ago, and, as I am

informed, are even in use yet, when the navigation of unfrequented inlets is attempted. It is wonderful to think of the careful, exact work done a hundred and thirty years ago by the sailing vessels and ship's boats under his command, threading the labyrinth of these waterways, with their tides running like mill-races, laying down the coast-line of the mainland and of the islands, sounding the channels, determining the geographical position of all important points, and carrying the survey all along the shore. He was not only a great navigator, he was a great hydrographer, and he was more than that, he was a great gentleman, as his treatment of the natives wherever he came in contact with them, in the South Seas as on the Alaskan coast, testifies. We begin with him at Puget Sound, which is named for his lieutenant, and we end with him at the Lynn Canal, which he named for his birthplace in Essex. I am not sure if it be the same Lynn, but the name always recalls to me the last lines of Tom Hood's powerful poem, "The Dream of Eugene Aram"—a poem that used to give me creepy feelings in childhood:

> "Two stern-faced men set out from Lynn
> Through the cold and heavy mist,
> And Eugene Aram walked between
> With gyves upon his wrist."

I must not get upon the subject of Vancouver, however, or it will be long ere we reach the Yukon.

The sea voyage ends at Skagway, on the Lynn Canal, and a short day's wild ride on the White Pass Railway will take the visitor to the summit of the coast range

by a series of bold gradients and will drop him down again on the other side in the valley of the Lewes or Yukon River.

But before leaving Skagway the visitor of any robust constitution whose baggage contains other foot-gear than patent-leather shoes, is urged to spend a day in the ascent of Mt. Dewey, a fairly easy climb of something less than five thousand feet, and get the superb bird's-eye view of the country which that summit affords. Let him dismiss from his mind any worry about steamboat connections; he has come to the gateway of a country where he will take his chance with the rest of us of catching a boat or missing it, all schedules of sailings and confident telegraphic assurances being equally vain and void. If he must wait, then he will wait; and storming and denouncing are idle; and wait he almost certainly must at one point or another. To recognise and accept this situation will bring peace of mind; any other attitude will but uselessly disturb it.

The climb of Mt. Dewey is by a well-defined footpath through the dense woods to one bench after another, and each bench bears a lake and the lakes are connected by sparkling mountain torrents that fall again and again in white cascades. When the upper lake is reached, the woods are past, the climber flounders through some boggy ground for a short distance to emerge upon the rounded mossy shoulder of the mountain, thickly bestrewn with boulders, and a short and easy climb in the open brings him to the coastwise face. Without proceeding to the top (though that additional

labour is well repaid) he will gain, from this lofty coign, in the course of a deliberate survey of the scenes before him, a better general grasp and knowledge of the characteristics of this region than steaming up and down the Lynn Canal from Juneau to Skagway for a thousand years would bring him. "Why will people imagine that they have seen a country when they have but passed along a channel at the very bottom of it?" asks Conway. He that has once viewed New York from the top of the Woolworth tower has certainly a better conception of its situation and environment than he that has viewed it only from the pavement of Wall Street and Broadway every day of his life. What a magnificent prospect of rock and ice, snow and water, spreads out before us! worth incomparably more than all the visits to evil-smelling fish canneries and deafening quartz stamp-mills in the world. Here we are in nature's own gigantic workshop; let us linger awhile and see what she is doing. I always sympathise with St. Peter on a mountain top; I want to build tabernacles.

In front of us, at our feet, the slim tongue of the sea that looks like a river, up which we have passed in the steamship, occupies its narrow submerged valley, and extends to the right to its visible termination at Dyea. Across it, rise mountains as lofty as that on which we stand, and the basin within their shoulders and summits holds a vast snow-field. From a low place in the rim of that basin there is detached towards us a small blue-white glacier, which melts half-way down the steep

mountainside and dissolves itself into a number of glittering rills that stand out like white pencil marks against the dark moss on their way to the salt water below. But the great mass of the snow is discharged in the opposite direction, for this snow-field, one judges, is one of the many gathering basins of the Muir Glacier, that mighty river of ice, twenty-five miles wide just below the confluence of its chief tributaries, which, by John Muir's estimate, contains as much ice as all the eleven hundred Swiss glaciers combined. "Though apparently motionless as the mountains, it flows on forever,"* writes that Grand Old Man of the American mountains, the earliest pioneer and explorer of the orography and glaciography of these coasts, who has recently gone from the lofty heights with which he was so reverently familiar on earth, to wander amongst the mountains of the Delectable Land.

From below, the snow-field is invisible, and as the basin reveals itself to us only when we rise almost to its level, so would all the tops of all the mountains we have seen along these hundreds of leagues of travel, reveal similar basins which they surround and guard, could we stand at similar advantage to them. These are the vast reservoirs of the snow, and the glaciers along this coast exist because every winter the mountain basins receive more snow than is melted in the summer. The constantly superimposed and aggregating weight compresses the nethermost layers of snow to ice, and then forces that ice down through whatever

* "Travels in Alaska," p. 264 (Houghton, Mifflin, 1915).

readiest channels of descent it can find, cutting those channels out, age by age, deeper and deeper, grinding their rock beds and rock sides to powder and thus gradually tearing the flanks out of the mountains themselves as it carves and sculptures them to forms of continually growing beauty. Here is the whole story of the glaciers at a glance, comprehensible as it never can be from below.

Turning to the right, and perhaps descending a little to gain the full view, there lies the valley of the Skagway River, the river itself a tiny thread visible only here and there until it spreads out into its delta. And there is the checker-board of the town, and from the town like three fingers extended the three long piers reach out over the tidal flats of the delta to the deep water of the Lynn Canal: one only in use now, the others, like so much else at Skagway, so much else that we shall see on our inland journey, merely reminiscent of bygone commercial activity.

Looking up the Skagway valley, we see the route of the railway on which we shall presently rise out of it, and the shoulders of the barrier ridge that must be surmounted ere the valley of the interior country can be reached.

It is on the railway journey over the mountains that memories of the great migration of twenty years ago, which first drew the world's attention to the northern wilderness we are about to enter, begin to crowd in upon the traveller. Skagway itself is but the remains of the town the gold-seekers of the Great Stampede built, and

a few miles farther up the Lynn Canal, at its actual termination which we saw from the mountain top, lie the remains of another town, now quite deserted; but Dyea was a busy populous place when the Chilkoot Pass was a rival gateway to the White Pass.

I have often purposed crossing the mountains on foot from Dyea as the pioneers did, following the traces of their track and seeing for myself the difficulties they surmounted. It would be an exceedingly interesting détour and in fine weather it need not be more than a pleasant two days' excursion, reaching the railway at Lake Bennett where the boats used to be built and the water travel begun, but on my journeys I have foolishly allowed myself to be deterred therefrom by the intimation that it would involve missing the lower river steamboat, and so have hurried on—to kick my heels for a week in Dawson. To the vigorous tourist with strength of mind enough to ignore all that is told him about steamboat connections, it is commended as an attractive variation of the accustomed route with most noble views of mountains and glaciers, and the long river-like sea channel deep down at the bottom of everything.

Even from the railway train the traces of the pioneers are evident. There, winding along below us may be seen the trail their feet beat out in the moss, the rude bridges they built as the trail crossed and recrossed the mountain streams, the remains of the roadhouse just below the start of the steep ascent. We are whisked along and do but catch glimpses, but they suffice to conjure up a vision of heavily laden men toiling

painfully up the rocky path in a continuous procession, their backs bowed under their burdens but their hearts buoyed with the expectation of wealth.

The summit and the international boundary are crossed at the same time, and proceeding down the gentler slopes of the Canadian side of the range, we are already in the Yukon watershed, and within a few miles of the head of Lake Bennett. Lieutenant Schwatka gave this lake and the one just above it, Lindeman, the names they bear. It was on Lake Bennett that Schwatka constructed and launched the raft on which he made a famous voyage more than half-way down the Yukon. Lake Lindeman (named for a German geographer) and Lake Bennett (for James Gordon Bennett) are the sources of the Yukon. On Lake Bennett the traces of the gold-seekers are thick. The town of Bennett stands on the shore of the lake, completely deserted, a church with a tower and spire amongst the abandoned buildings. The railway killed this place, for until the railway was built Bennett was the head of navigation of the Yukon, and would be still, and the railway would end here, but for the three and a half miles of obstruction which the Miles Cañon and the Whitehorse Rapids constitute. Steamboats plied on the lake and down the ninety-five miles of lake and river to the cañon in the early years of the Klondike rush. Indeed when the railway rendered this steamboat service unprofitable the boats were taken down through cañon and rapids to Whitehorse and were used on the Yukon, though it would have been practically impossible for them to return.

The head of Lake Bennett is but fifteen miles from the summit of Dyea Pass, whence the first trickling tributaries of the Yukon arise. The great river is thus unique amongst the great rivers of the world, as Ogilvie points out in his "Early Days on the Yukon"* (a book full of information and interest), in being navigable within easy sight of its ultimate source, to its mouth, a distance of twenty-five hundred miles, save for the three and a half miles aforesaid; and many a raft and rude boat of whipsawed lumber passed through *them*, as well as the steamboats that used to ply above them.

At the foot of Lake Bennett lies the little town of Caribou Crossing and in its near neighbourhood is a considerable Indian boarding-school conducted by the Church of England. Since this is the beginning of missionary work amongst the natives of the interior country, it may interest the reader to know that along the whole of the Canadian Yukon that work is in the hands of the English Church, and that as soon as the boundary is passed and we are in Alaska again, the work is taken up by the other branch of the Anglican Communion, the American "Episcopal" Church, and by it exclusively continued for another seven hundred miles of the river, or until Tanana is reached, after which it is divided between the Roman Catholic, the Russian, and the Episcopal Churches, they alone of all religious bodies having any work amongst the natives of the interior.

So we have come to the waters of the Yukon, and a ride of a few more hours, very tame compared with the

* Ottawa: Thorburn and Abbott, 1913.

THE RUINS OF THE TOWN OF BENNETT.

excitement of crossing the range, will bring us to Whitehorse, where we shall take shipping again. One hundred and ten miles of rails has brought us from salt water to fresh, and we launch ourselves for a journey of twenty-two hundred miles that shall take us right through the heart of Alaska to salt water once more.

Distances on the Yukon

I have already mentioned two figures of distances with regard to the length of the Yukon that involve discrepancy (though it might not have been obvious to the reader); Ogilvie's estimate of twenty-five hundred miles from the head of Lake Bennett to the mouth of the river, and the commonly accepted twenty-two hundred miles of navigable length from Whitehorse;—for there is a stretch of but ninety-five miles of water travel between them. Discrepancies like this will be found all along the river. I do not believe that any one knows the exact length of the river. What is the exact length of any river?—how is it determined? is there any accepted rule? Schwatka takes the axis of the river, that is to say, a line down the exact middle of it; but the steamboats do not; they swing with the channel from one side to the other and always on the outer edge of the curve close to the bank. Therefore, if Schwatka's estimate be accepted every one who travels down this river from its head to its mouth travels much farther than its entire length. Schwatka's estimate of navigable length is two thousand and thirty-six miles. Dall estimates the distance from Fort Yukon to the mouth at nine hundred and six miles; the steamboat company calls it eleven hundred and eighty. Again, if distance travelled in going down the river be the gauge, it will differ with different craft, and will differ much more widely if distance travelled going *up* the river be taken; for instance, the tunnel-sterned gasolene launch operated by the writer draws but sixteen inches of water and can skirt sand-bars in slack water instead of "bucking the channel" around the curves. Again, when the river has two or three or half a dozen channels, which one should be taken?—the longest or the shortest?

So the reader must expect to hear and see discrepant statements about this river's length, in whole and in parts. Along the river itself the larger distances obtain more acceptance because it is generally considered that the deep-water or steamboat channel should be followed in making the estimate.

CHAPTER I

THE UPPER YUKON

Now that the adjacent copper-mines are in operation, Whitehorse has promise of prosperity that could never come to it merely as the starting-point of Yukon navigation: indeed as the town has stood a number of years it has presented conclusive evidence that a railway does not necessarily bring business and that even the terminus of a railway may be a very dull place. The railway rates across the mountains are so enormously high that several attempts have been made to compel a reduction, but since it is an international road, with one end in the territory of the United States and the other in Canada, it is not easy for either government to handle it. It must of course be borne in mind, if one would be just to the White Pass Railway Company, that the Yukon Territory and interior Alaska export nothing but gold-dust, which does not demand freight-cars for its transportation; the "haul" is only one way, and the trains that bring in supplies of merchandise of all kinds go back empty—saving the recent output of copper ore. It must also be remembered that all the winter through the road is operated at a great loss. It is only during the season of navigation, and that is less than four months in the year, that there is any freight traffic at all, or any passenger traffic to speak of, yet

the road is kept open all the winter at great expense and trains are regularly run. It is said, and may I think be readily believed, that so great was the press of traffic during the building of the road, and so great the demand for its services at any price, that section by section, as it was built, its receipts paid for its construction, and that for the first year or two after its completion it paid over and again for itself. Of late years, it is easy to see that its revenues have very considerably decreased with the decay of mining on the upper river.

There is little to say of Whitehorse: it has a barracks of the Northwest Mounted Police, two or three struggling churches, the usual row of shops along the water-front—and two hotels. The hotels have one standing joke. They live mainly upon tourists, and upon residents of the two territories going and coming, and very few people are guests of more than one night. In the morning, when time for payment has arrived, and room rent and meals have been reckoned up, comes the question, "Did you take a bath?" The lady from the East bridles and perhaps blushes at the question, and answers, "Why of course I did." "Another dollar, then," is the comment on the answer.

The last time I was in Whitehorse a train full of hungry tourists had been deposited in the town in the evening, the steamboat sailing being set for the next morning, and when, after attending to some affairs, I went to one after the other of the two restaurants, both were crowded, so I waited awhile and walked the streets till the congestion should be relieved. When I had

secured a table, came a Swedish waitress with rudimentary English and a bill of fare. "Roast beef," I ordered. "Roast beef is all out," she said. "Then I'll take roast mutton," I said. "Roast mutton is all out," she responded. "Then what has that cook got?" I inquired. "I don't believe he ain't got nutting," she replied. There was no use asking why she had not told me so at first; I simply went to the other restaurant. Here it seemed there was plenty, and I ordered some baked salmon. "Full order, or a starter?" queried the brisk youth, indigenous I judged, but surely western. Now I had been living and travelling all the winter in the East, and that is the only excuse I can make for my next question, "Is this *table d'hôte* or *à la carte?*" The youth gazed at me, troubled for a moment, and then he answered with a smile: "Now you sure got me; the boss is gone to a picnic and you sure got me." Then the meaning of "starter" came back to me, and more ashamed of my question than the boy was of his ignorance, I began an excellent meal with some very excellent baked salmon—than which nothing is more delicious when first it comes in season. It is neither *table d'hôte* nor *à la carte*. You may make your dinner of beef or mutton or whatever meat may be on the bill of fare, and you may have a small portion of fish as well, if you like; or, if you be hungry for salmon, you may make your whole meal of it; hence the inquiry whether you wish a "full order" or merely a "starter" of fish. The charge will be the same in either case. But it is curious how some people chance to remain in one's mind while hundreds

of others fade completely away. I cannot recall the face or the speech of any one who served me with food all that winter and spring that I was at hotel after hotel in the Eastern States, but this bustling youth with his frank ignorance and his engaging smile at Whitehorse is vivid before me. I think he must have drawn trade to that restaurant, especially if the "boss" who served us at breakfast next morning were much addicted to picnics. The only other restaurant attendant I recall equally well was a girl in Colorado fourteen or fifteen years ago. I do not remember the name of the little town, but it was the nearest town to the Spanish Peaks, for I had come down from the top of them that day, tired and hungry, and when my meal was done and I had paid the bill, I gave the girl a quarter, for she had taken pains in her attendance. "What's this for?" she demanded, holding it in her open palm. "Why, it's for you, if you don't mind taking it." She paused a moment, looking me straight in the eye, and then said, "I'll ask mother," and withdrew for that purpose while I waited, amused. Presently she returned and said: "Mother says it's all right, and I thank you." Think, however, of a waiter in a restaurant who actually did not know what a tip was! I am afraid they are grown more sophisticated, even in rural Colorado, by this time, and certainly the tip is well understood in Alaska and the Yukon Territory; while as regards steamboat travel, it has become as essential a lubricant on this river as on the Atlantic Ocean.

The fairly comfortable little steamboat in which we

are berthed pushes her way up the river with a laden barge ahead of her for some hundreds of yards ere she can find room to turn around and put her barge's nose down-stream, and then we are launched on our voyage. The mountains rise on either hand. All the way up the Inside Passage we have wondered what was on the other side of the wall of mountains beneath which we sailed; then we crossed them and found out. On the other side are simply more mountains; and all through this Yukon Territory and far beyond into Alaska, we never get away from them, mountains to right and mountains to left, mountains whether one looks ahead or astern; and should one climb the highest of them anywhere one chose, and secure its wider view, still more and more mountains would rise before one's eyes. Of course, mountains imply valleys, and the country is seamed with them but in general they are narrow and by far the greater part of it is at one steep angle or another. It is a rugged broken, precipitous country, well-wooded with small coniferous timber, and the water of the river that winds amongst the forested crags and bluffs is clear as crystal. Here are all the elements of picturesqueness, and indeed I think there can be few more picturesque streams in the world than the upper Yukon.

Slipping along with the combined speed of the swift current and the boat's wheel we should make fifteen or sixteen miles an hour were it not for the barge, which nearly doubling the length of our craft, gives us pause as we turn the sharp corners of the narrow channel, and he who is interested in the de[illegible] navigation

will take pleasure in watching the skilful handling of the boat; the reversing of the engines that she come down slowly to the turn, the nose of the barge perhaps just on the point of touching a bar, the sharp jingle of bells, the immediate spinning of the paddle-wheel in the opposite direction, and the swerve right across the river as the steam steering-wheel is coincidentally thrown over.

When the channel is further constricted by low water, the operation of "jack-knifing" is still more interesting. Sometimes the available space is too small for the length of boat and barge to be turned as one; then the barge is partially loosed from one of the two cables that bind it to the steamboat, so that it drifts by the force of the current to an angle with the latter such as the blade of an open knife makes with the handle when one begins to close it, and in this relation to one another boat and barge are able to pass the turn; whereupon the cable is drawn tight again, and perhaps in a few minutes more the other cable may be similarly loosed to "jack-knife" round a curve in the opposite direction.

Thus, with really admirable skill, now drifting with the current, now actually for a few minutes going upstream against it, now with "full speed ahead" adding motive power and current together, we pass thirty or forty miles of narrow river and come to the ticklish entrance of Lake Lebarge.

This lake, thirty miles long, surrounded by bold rugged mountains, was named for Michael Le Barge, like Ketchum and Kennicott, of the Western Union

Telegraph Company's explorers of 1866—of which exploration more will be said later. It is impossible to tell from Dall's account whether Le Barge ever saw this lake or not. Ogilvie says he did not, but that the account he gave at second hand from an Indian was so exact that his name was afterwards given to it. Kennicott, Le Barge's chief, died of heart-disease at Nulato without apparently leaving any narrative of his work, and Dall, who was never above Fort Yukon, has only vague notions of the upper river. Dall put the names Kennicott and Ketchum on two lakes which he describes as the sources of the Yukon, and I found it impossible to tell if they were the lakes that Schwatka afterwards named Lindeman and Bennett or not, or if one of them were this Lake Lebarge (for Dall thought Selkirk the head of navigation). However, the matter is of interest only to those eager to know all that is to be known about the early history of this country, with whom I must class myself, and I trust that I may be pardoned this and similar excursions into the minutiæ of geographical nomenclature, for at the worst, the reader's right of skipping is blessedly inalienable, like the right of going to sleep during the sermon in church.

Lake Lebarge has other interest; it is one of the prime features of the Yukon River; it is more, it is one of the prime factors of Yukon navigation. Let us take a few minutes while the steamboat enters the lake and the prospect broadens to the wide stretch of water with its rim of rocky mountains, to consider this matter.

The Yukon River opens about the 10th of May, and

within a few days is clear of ice from the lower end of Lake Lebarge to its mouth. But the lake, having little current and a narrow outlet, holds its ice for nearly three weeks longer. Interposing itself between the navigation and railway head at Whitehorse and the open water, it forbids the use of the river to passengers and freight coming from the outside for three weeks after the river is free to the whole interior of Alaska and most of the Yukon Territory. Now let us go down to the mouth of the river. In Bering Sea also, the ice holds, or is present in such dangerous quantity and form that ocean-going vessels cannot approach St. Michael until well into June; and it has been as late as the 4th of July before the first vessel reached that place. So there is the curious circumstance that although the river for upward of twenty-one hundred miles of its course is open and free, it is yet closed at its head and closed at its mouth.

Once this situation is grasped it is difficult to understand why in the heyday of traffic when the railway was built, it was not extended to the foot of Lake Lebarge—or say thirty miles farther to the Hutalinqua Landing, which would cut out the swift and narrow and dangerous Thirty Mile River connecting the two. I suppose the railway company felt sure that it had the whip-hand of the country anyway, and would not spend the necessary money to make its dominance sure. It would have given an open season three weeks longer, and those three early weeks when the people of the interior, having passed the long winter, are most anxious

for fresh things from the outside, and will pay almost any price for them. It would have been such an immense advantage in its competition with the lower river route that it would probably have brought the monopoly of the traffic into its hands long before it came. The time is passed now, and with declining freights and the government railway building to Fairbanks, will probably never return, but it seems a glaring instance of a lost commercial opportunity.

Moreover, this three weeks or month that the navigation of the river is free to residents of the interior and barred to people from the outside, is, in my opinion, far and away the most delightful part of the open season. The snow still lingers on the mountain tops, great masses of pure white cloud roll upon the blue sky; there is a freshness and vividness of vegetation that belong to this period alone; every open space is carpeted with short-lived flowers, the reeking arctic moss itself bursts into myriads of brilliant blooms; under the strong encouragement of the perpetual daylight and almost perpetual sunshine, every green thing grows with a joyous, eager celerity that shoots up blades and unrolls leaves visibly under our watching eyes. The summer heats are not yet come, nor the swarms of mosquitoes—they hold their densest battalions in reserve until Lake Lebarge "goes out" and the unacclimatised blood comes in. The waters are alive with wild fowl, most of which will presently resume their interrupted migration to the arctic coasts.

Spending the greater part of every summer in travel

upon the water as I do, this earliest navigation I find much the most pleasant of all.

Some small perishable freights in haste come down by water from Whitehorse, are sledded over the rotting, melting ice of the lake and launched again on the Thirty Mile River; and thus the first fresh eggs and fruit and the first green vegetables come to Dawson and Fairbanks and are peddled along the river generally, two or three weeks before the first through steamboats arrive, and six weeks or so before anything can be raised from our northern gardens; for it is not considered safe to plant anything along the Yukon until the ice has gone out; indeed many people will not put seed or set into the ground until the first of June.

Like most mountain lakes, Lebarge is subject to sudden violent storms, and it is surprising how rough and choppy it can become. A number of deaths by drowning occurred in the early days of travel, for a man cast into these northern waters, lake or river, has little chance for his life. They are so cold that the body becomes numb and the muscles paralysed. Moreover, as a rule, they do not give up their dead. Their temperature is below that at which rapid decomposition takes place, and the gases of putrefaction, which in most waters raise the bodies of the drowned to the surface, are not formed. Every year yet, the Yukon and its tributaries take no inconsiderable toll of human life, and perhaps nothing but an empty boat half full of water drifting down the stream will remain to arouse fears which subsequently prove to be well-founded.

Here a reference may be made to the admirable system introduced by the Northwest Mounted Police when first they entered the Territory and maintained ever since. Every small boat that leaves Whitehorse has a number plainly painted on its bows, and that number together with a description of the occupants is telegraphed to all the police posts on the river. If three men should start from Whitehorse, for instance, and only two arrive at Selkirk or Dawson, they must give account of the third, and should there be any suspicious circumstances, are detained until the matter is cleared up. In this way and by a corresponding trail regulation in the winter, and with the steamboat lists, the police keep strict account of every man who enters and every man who leaves the Yukon Territory, and it has been a great help in securing the remarkable record for the efficient administration of the law and the suppression of crime which that organisation has made for itself here. Midway down the lake the west shore becomes particularly fine, with great towers and buttresses of red rock. On a clear still day their reflection in the water is very beautiful, but the whole shore of the lake, east and west, is rock-bound and rugged and highly picturesque.

The steamboat shoots out of Lake Lebarge into the swift channel of the Thirty Mile River, one of the most beautiful and one of the most dangerous stretches of the whole Yukon, for it is narrow and tortuous and studded with sunken rocks. First and last many a steamboat has punched a hole in its bottom here, many a

scow has been wrecked. Whenever we of the middle river hear of a steamboat coming to grief above Dawson, we ask almost as a matter of course: "In the Thirty Mile?" Fortunately, so far as life is concerned, the water is shallow, and as a rule steamboats meeting with such misfortune are able to patch the holes and proceed.

This and other references to accidents on the Yukon must not be taken to imply that the navigation of the river is in any general sense dangerous, for it is not. I cannot recall ever hearing of the accidental loss of a steamboat passenger's life. Most of the fatalities are amongst those who travel in small open boats, though from time to time the steamboats lose a deck-hand. I do not think there can be a river in the world, used as much as this is, that has any better record for the safety of its steamboat traffic. And for my part I am convinced that winter and summer, on the water and on the trail, life is much safer in the north than it is, let us say, in the streets of New York: I think the most dangerous crossing of the Yukon is far less hazardous than the crossing of Broadway. I often feel that I am taking my life in my hands when I cross from curb to curb of those streets, seething with swift-gliding machines, not more merciful and far more incalculably erratic than the strongest force of water. The safety of city dwellers is a safety they fondly imagine to themselves, and the insecurity of the wilderness in their minds is but its corollary, plus a plebeian dread of the unfrequented and unfamiliar. The only advantage the city has is this,

that if an accident does happen there is prompter succour; but in the wilderness accidents are far more rare and the ordinary condition of life is far more secure.

At the end of the Thirty Mile there comes in on the right bank the first important tributary, the Teslin, draining Lake Teslin far to the south, which itself has affluents that rise near Ptarmigan Pass in the Cassiar District of British Columbia, a well-known gold-mining region which first drew numbers of men to the north, preceding by a decade or two the excitement of the Klondike. I have no personal acquaintance with the Teslin country, nor indeed with any of the Yukon Territory affluents of the great river, but on the map it has always seemed to me that if the rule should hold of counting the longest tributary of a river as its true head, then these waters of the Teslin, with Teslin Lake and the streams that drain thereinto, constitute properly the upper waters of the Yukon, rather than those to which that name is nowadays applied.

After the junction with the Teslin the Thirty Mile becomes the Lewes River, and is commonly so called until the confluence with the Pelly; so that the Lewes and the Pelly are said to make the Yukon, but of late years the name Yukon is applied in a general way to all the variously named stretches of the river.

It must be borne in mind that this Yukon River was discovered piecemeal, and special names were given by individual explorers to the parts they reached, usually without any knowledge or possibility of knowledge that they constituted a continuous stream. We approach

the region of Robert Campbell's discoveries, a capable and adventurous agent of the Hudson's Bay Company, of whom more will be said later. Coming down the Pelly in 1842 he named the river into which it flowed (or, as he judged, which flowed into *it*) after John Lee Lewes, one of his colleagues in the company's service.

The Big and Little Salmon Rivers come in on the right bank shortly, with an Indian village and a little mission establishment at the mouth of the former, and then comes an important tributary on the left bank, perhaps one hundred and fifty miles below the foot of Lake Lebarge, the Nordenskiöld, named by Schwatka for the famous Swedish explorer who made the first northeast passage in the *Vega* in 1878–9. This is one of the few names given by Schwatka on the upper Yukon that survive, and we may well be grateful for the desuetude of the majority of them. Never was the pedantry of exploration better illustrated than in the medley of cosmopolitan names of geographers and naturalists and ethnologists with which Schwatka disfigured the streams and mountains of the Yukon, some of them as hard to pronounce as any Indian name could be, and totally devoid of connection or significance. Prejevalsky and Richthofen and d'Abbadie and Von Wilczek and Semenow and Maunoir were doubtless famous enough in their generation, and some of them are not forgotten to-day, but what sense of fitness, what sense of humour, can a man have had who expected English-speaking people to use such names familiarly as place-names? A little pains to have secured from the

Indians their own names for the tributary streams would have preserved to us a nomenclature always appropriate, always significant; and to my mind, even the corruption of a difficult Indian name into something that English-speaking people can more easily pronounce, is far preferable to the meaningless exotic names that have been so freely applied throughout the country. But Lieutenant Schwatka on his clumsy raft was in a hurry to get down to St. Michael, lest he miss his chance to return to civilisation, and Schwatka is supercilious not only of Indians but of Hudson's Bay people as well, with a true military superciliousness.

It is up this Nordenskiöld River that the winter stage route proceeds to Whitehorse, crossing the Yukon on its way from Dawson about twenty miles below the confluence, at a place called "Yukon Crossing," where the tourist may see the large vehicles on runners that are employed, and the stables where the relays of horses are kept.

The river has already broadened considerably since the accession of the Teslin and the Nordenskiöld, and begins to be crowded with islands. Indeed the multiplicity of islands along the Yukon is one of its characteristic features noticed by every traveller.

A score or so of miles below the Yukon Crossing the little settlement of Carmack is passed on the left bank, with its store and its mission and cabins, and two or three miles farther the Tantalus coal-mine is reached, one of the very few that are regularly worked on the whole course of the Yukon. Here, it is quite likely, the

steamboat will take another barge in tow, for it is from this coal-mine that Dawson is supplied. The name "Tantalus" was given by Schwatka to a bold high bluff that the windings of the river bring again and again into view, without, apparently, any nearer approach for a considerable distance, and the name was transferred to the coal-mine in the neighbourhood.

We now approach what all tourists regard as the chief attraction of the upper river, the Five Finger Rapids, and their passage, while quite safe to careful navigation, supplies a sufficient measure of excitement and sensation. A lava dike right across the bed of the river has been cut through in several narrow gaps, leaving the jagged, tree-grown fragments sticking up very picturesquely as isolated rocks. The channel used is the one nearest the right bank and so strait is the way and so close does the steamboat approach the rock that it seems to the people on the upper deck that if they leaned over the rail and stretched out a hand they could touch it. The water boils and roars, dashing its waves against the rocks as if rebellious at their restraint. In going down-stream, one is swept at such speed through the narrow gut of the channel and out upon reunited but exacerbated waters that no more than a glimpse is had ere the five fingers are gone and the tumult and tossing of the rapids below are left behind also; but in going up-stream one has ample time to observe carefully the whole interesting scene. Schwatka rightly judged that a vessel with a steam windlass could pull herself up through the channel we have come down,

and a permanent cable attached to a rock above the narrow chute is picked up by the steamboats and passed around the windlass drum. By this means, even with a barge, they manage to get through.

Schwatka called these rapids the "Rink Rapids" after "Doctor Henry Rink of Christiana, a well-known authority on Greenland," but Greenland is a long way from the Yukon, and the five rocky towers sticking up in the river appealed more to the imagination of the early voyageurs than the erudition of the Norwegian geographer. Rink, however, must have his rapids, and the name lingering, I suppose, in the memory of some traveller familiar with Schwatka's map, was saved by its brevity and ease of utterance and applied to rapids lower down. I heard two ladies discussing the name when last I passed through them. "I don't see any resemblance to a skating-rink here," one of them said, "it's too rough." "Maybe the waves looked like skaters bumping into one another and knocking one another down," suggested the other. So passes the fame of the authority on Greenland and the copious writer about the Eskimos.

A continuous, thin white line running for many miles along the right bank, just below its surface, attracts the attention of all visitors and provokes many inquiries. It is a deposit of volcanic ash, generally attributed to Mt. Wrangel in the Copper River country far to the west, presumably because Mt. Wrangel still smokes. The Canadian geological surveyors, however, I am informed, have discovered a considerable lava

THE FIVE FINGER RAPIDS.

plug and evidence of an exploded crater in much nearer mountains to the east, from which, in their judgment, the eruption of ash proceeded. It is so close to the surface that it must be of comparatively recent origin, perhaps within a century or two, and I have been told that the Indians of these parts still transmit tradition concerning its occurrence. Certainly it overspread a wide area, for it is traceable, though not continuously, for upwards of an hundred miles. In places a double line indicates that there was more than one such eruption.

Now comes the most important tributary the Yukon has yet received, the Pelly, confluent on the right bank at a curious up-stream angle—so important indeed that it used to be considered the Yukon River itself, and "Pelly or Yukon River" still appears on some modern maps. Schwatka was prepared to take measurements of the flow of both streams to determine this question, but, when he came to the confluence, a glance as he glided by convinced him that measurements were unnecessary, so considerably did the Lewes exceed.

Robert Campbell's voyage down the Pelly in 1842 has been referred to. From a tributary of the Liard, he struck across to this stream, which he named Pelly after the governor of the Hudson's Bay Company. At its mouth he encountered unfriendly Indians and was forced to turn back. I should like to see his own account of this, but have had no opportunity. In 1848 he descended the Pelly again and built a fort or trading-post opposite the confluence of the Pelly and Lewes, calling it Fort Selkirk after that Lord Selkirk, I cannot

doubt, who had made a brave and philanthropic attempt to colonise the Red River country in the face of the murderous opposition of the Northwestern Fur Company, the great rival of the Hudson's Bay Company. The Chilkat Indians, however, had always acted as intermediaries between the "Stick" Indians, as those of the interior were called because of the "little sticks" which took the place of the great timber of the coast, and the white traders, procuring the commodities of the latter from the ships that visited the coast, and bartering them to great advantage with the "Sticks" for the furs of the interior, of which the white man was ever in search. The Chilkats resented Campbell's intrusion into their preserves and the loss of their very profitable intermediation, so a party was formed that came over the mountains and swiftly down the lakes and streams, and fell upon Fort Selkirk like a bolt from the blue. Campbell and his companions they bound but did not injure, and proceeded to the looting of the stores and the firing of the buildings. When the destruction was complete they released their prisoners and returned up the river, and Campbell and his companions floated down to Fort Yukon, where Alexander Murray was already established. When Schwatka made his raft journey thirty-four years later the chimneys were still standing to mark the site, and I think some ruins of them may be seen yet.

It is said, on what authority I know not, that the Russians on the coast were the direct instigators of this raid. Had the blow been aimed at Fort Yukon there

would have been some justification for their intervention, but Selkirk was well within the British territory. However, these trading companies cared little for political boundaries, the one or the other; their object was fur, and they were never very scrupulous as to how they obtained it. The superior vigour and activity of the British company led its agents far afield, and this venture of Campbell's is a shining instance thereof.

Campbell was thus the first man to explore the river between Fort Selkirk and Fort Yukon, and a published account of his journeys added that much to the world's knowledge of these parts.

When the great stampede to the Klondike took place, Fort Selkirk was re-established, and it was hither that the Canadian Government sent its Yukon Expeditionary Force in 1898. An enormous mass of men, ninety per cent of them aliens, and by far the greater part citizens of the United States, was congregated at Dawson, and there was considerable disaffection to the Dominion Government chiefly in connection with the mining laws, and, I dare say, some foolish seditious talk. At any rate, the Canadian Government thought it best to have a military force at hand; so it sent this body of troops. There was never any need of their services and they were soon withdrawn.

Selkirk is to-day chiefly a native place, with a mission church and school, a couple of stores, and not much else. During the life of Bishop Bompas, the first bishop of these parts, and during the earliest years of the episcopate of his successor, Bishop Stringer, the present bishop,

title was taken from this place and they were Bishops of Selkirk. But of late the title has been changed to conform to the political division and is "Bishop of the Yukon Territory."

One of the chief tributaries of the Pelly, the Macmillan, is famous amongst sportsmen for the sheep-hunting its mountains afford, and Mr. Charles Sheldon in his "Wilderness of the Upper Yukon" has given a graphic account of the region and the sport.

The upper ramparts of the Yukon are generally counted to begin at the confluence with the Pelly. The mountains grow loftier and the channel presses closer beside them, but the whole river has been so mountainous that the distinction is a little arbitrary.

In the writer's opinion the most charming part of the Yukon is already behind us, for the steamboat is now rapidly approaching the confluence with the White River on the left bank, a stream which changes the whole character of the Yukon water. Above the confluence the river is a pellucid stream, sparkling and gleaming and revealing the pebbles at its bottom whenever it is still enough to do so. But the White River discharges so turbid a stream that within a short distance it has completely clouded and befouled the Yukon to a total loss of limpidity that is never recovered.

The White River and the Tanana River are the Yukon's two great glacial tributaries, and their headwaters drain the glaciers on the opposite sides of the same mountains. In addition to the glacial silt with

which the White River is charged, Ogilvie says it dissolves out of its banks great quantities of volcanic ash, and one judges therefrom that these deposits must be heavier and deeper in the course of the White and its chief tributary, the Donjek, than on the Yukon. One who has seen the Tanana, which so far as I know was never accused of volcanic ash, will consider that glacier drainage itself is sufficient to account for any amount of solid matter carried in temporary solution; but the distinctive colour of the White River from which Robert Campbell gave it its name, is quite different from the tawny Tanana, and may be due to the inclusion of volcanic ash in its solid constituents.

Whatever it be, the White ruins the Yukon. All the picturesque bluffs and bold craggy mountains in the world will not restore the charm of clear water, and henceforth its waters are muddy to its mouth; and far out beyond its mouth, miles and miles into Bering Sea its mud fouls the salt water.

In the middle river, which I know far more familiarly, are many spots that I love, many reaches with the diversified beauties of ruddy rocks and olive-green trees near by, and soaring mountains beyond; there are great gloomy depths within the Lower Ramparts contrasted in the foreground with smiling valleys, dappled with spruce and birch, cottonwood and willow, through which pretty rivulets meander, making very potent appeal to the imagination. There are perspective views where hills rise beyond hills into mountains, and still more distant mountains boldly overtop one another,

with the broad, level river sweeping a great curve in front; scenes of a more ample dignity and a more spacious picturesqueness than anything the upper river can show. Yet I never visit the upper river without falling anew under the spell of its sparkling water, nor return to my own region without lament of a lost translucence which nothing can compensate.

So I have grown to a foolish resentment of the White River. But for this stream another seven hundred miles of the Yukon would open its frank depths, naked and unashamed to the delighted eye; would "lure with the light of streaming stone," as Sidney Lanier sings in the "Song of the Chattahoochee," would mirror the skies and the adjacent rocks and trees with a fidelity no turbid stream can touch. Glaciers must be drained, no doubt, but one wishes they could find some subterranean sewer to the sea; or, since the Tanana is already their special conduit, and no conceivable addition to its waters could make them fouler—the drainage of London would not affect their colour, consistency, or potability—one regrets that some slight change in the elevation of land did not discharge both sides of the glacier-bearing mountains into the same channel. But even such change would not rid us of that deplorable volcanic ash, and 'twould be a large undertaking to reorganise the hydrography of the country.

In the winter the whole Yukon flows beneath its crust of ice as clear as crystal: glaciers cease from troubling and volcanic ash is at rest; but the very flood that carries out the ice brings down the mud and the silt

and the ash, and for weeks at a time the water is undrinkable without filtering or settling.

The White River has had some temporary prominence amongst miners from time to time, but always to their disappointment. When gold was found on the upper waters of the Chisana,* a tributary of the Tanana, in 1913, the White was the most available, though very difficult, road thereto from the upper river, and a town sprang up at its mouth, but the Chisana was in general a failure, and one more long chapter was added to the northern tale of wasted labour and useless suffering. The town died.

A few miles below the confluence with the White another large river is received on the opposite bank, the Stewart, which stream was noted for its gold-bearing gravels ten years before the Klondike was discovered. In 1884, says Ogilvie, two men "cleaned up" thirty-five thousand dollars on these bars, and the news, when it reached the outside, brought in about one hundred men in 1886, who scattered, not only up the Stewart and its tributary the McQuesten, but widely over the country. This was the first small "rush" to the Yukon and the beginning of general prospecting for its placer-gold; they are said to have averaged one thousand dollars apiece, exclusively from washing sand in the summer-time; the merest "skim" mining, for deep methods of handling frozen ground were not invented until later. I have been told that most of these men

* This pretty name is commonly corrupted to the ugly one of Shu-shuan'na in miners' mouths.

were experienced prospectors and miners from the Cassiar country of British Columbia, then declining from the first flush of its gold production.

Thirty miles or so lower down, the Sixtymile River comes in on the left limit, with a small post at its mouth called Ogilvie after the pioneer government surveyor whose book has often been referred to. The Sixtymile (these distance names, for there are a number of them, will be resolved presently) has the distinction that it was the scene of probably the first successful prospecting for gold in the whole country, for it was on a creek tributary to this small river that Arthur Harper, the pioneer prospector of the Yukon, found pay in 1875. The creeks of the Sixtymile were famous before the overwhelming discoveries on the Klondike eclipsed everything else.

As early as the year just mentioned, this same Arthur Harper and two others, whose names must appear in even the most cursory glance at the beginnings of things on the Yukon, Jack McQuesten and Alfred Mayo, had started a trading-post which they named Fort Reliance, about six miles below where Dawson now stands. It was from this post that the men prospecting above and below it secured their supplies, and it became a base for estimating distance, and the distances, in their turn, became the names by which certain creeks were known. Hence Sixtymile River, which was about that distance above, and the Fortymile, about that distance below, Fort Reliance, with others in between, and beyond.

But as we approach the termination of the voyage on the upper-river boats, as within a few hours we swing around a bend and the great scarred mountain—a landmark from the earliest days—that rises behind the town of Dawson, comes into view, the thoughts of the Great Stampede of twenty years ago swallow up all lesser matters of early prospecting and mining.

The story of that great gold "rush," not of course the greatest that the world has known, but certainly the most extravagant and sensational of all such movements of mankind, has never been written and perhaps never will be written.

A great deal, indeed, has been written about it, but in a fragmentary and, for the most, merely journalistic way, and little of it will live or ought to live. The verses of Robert Service are, so far, its most enduring literary memorial, for certainly the lurid melodrama of his novel "The Trail of Ninety-Eight" adds nothing to literature or to his fame.

It is only an episode of history but it is a striking and picturesque one. Macaulay could have enshrined it adequately in a score of pages of imperishable prose, and it is not unworthy the pen of a Macaulay. It would have found its chronicler, I think, but for the Spanish War. The minds of men were more and more turning to the Klondike, the newspapers and magazines were more and more occupied by it; Joaquin Miller, in his premature senility, had visited it (I shall never forget a lecture I heard him deliver on his return); Richard Harding Davis, I have been told, was contemplating the

journey; when, at a stroke, the blowing up of the *Maine* in Havana harbour violently forced the current of the world's interest into another channel, and the Klondike was thought of and talked of no more.

Of the writers which the Klondike Stampede produced, I suppose Jack London, news of whose death has come to me almost as I write these words, is easily first. He was in the country, he was a born story-teller: "The Call of the Wild" is, to my mind, the best story of the Great Stampede. Yet I cannot concede that Jack London has left any literary memorial of it, for he was a writer of romances only who cared nothing for the verisimilitude of his representations. His dogs are not dogs; his Indians are more ridiculously untrue to life than any that Fenimore Cooper painted; his white men are for the most part fancy characters also. The brutal animal side of life attracted him unduly, in those days of his early writing at least, and received undue prominence. The riot of drunken lust and reckless gaming was certainly there, but it was not the whole thing, and one grows weary of dance-hall and gambling-den stories after a while.

The Klondike produced no Bret Harte to record with wit and with pathos its comedies and its tragedies, its sordidness and its heroism, and therein California has the advantage. The men were there, but there was no pen to delineate its Colonel Starbottles, its Jack Hamlins. On the creeks behind Dawson were a number of debating societies, but there was no one to give us a "Society upon the Stanislow"; there was some

sort of Truthful James in every camp, but no one to put the breath of life into him.

When in August, 1896, George Carmack the white man, or one of his two Indian companions, "Skookum" Jim and "Cultus" Charley, panned some gravel on a creek of the Trondeg River, and found remarkably good prospects, they little knew that they had kindled a flame that should set the world on fire. And Robert Henderson, who had told Carmack of his recent discovery on Gold Bottom, and thus set him on the journey up Bonanza on the way to Gold Bottom, went on digging away where he was, disdainful of the breach of miner's comity of which Carmack was guilty in not, in his turn, sending word of the much richer discovery that had been made.

The news soon spread up and down the river, and Bonanza Creek and all the adjacent creeks were staked from end to end immediately. The local excitement grew as the richness of the ground appeared, and in January of the next year men on the Pacific Coast began to learn of the "strike" and to start for the new gold-fields; but it was not until August when a ship came into San Francisco harbour with something like six hundred thousand dollars on board, which the newspaper reporters at once multiplied to two and a half millions, that the excitement became world-wide.*

* See Ogilvie, from whom the account which precedes the asterisk is gathered. Ogilvie is very detailed on the Klondike discovery. He was in the country at the time, and is, I think, the most unexceptionable authority on the subject. His book is a mine of information, but since it has no index, and he is very discursive, the relocation of a statement is more like hunting for a needle in a haystack than mining.

Men of adventurous disposition and unattractive prospects, in all walks of life, began to plan their migration to the New Eldorado; small shopkeepers sold their business, clerks and bookkeepers and salesmen realised their savings or mortgaged their homes or borrowed on their life-insurance policies; in many towns throughout the United States little groups pooled their resources and started out in company, or selected some member or members to go representing the rest and covenanting to share the gains with them. Professional men, physicians and lawyers and engineers and even, in some cases, ministers of religion, abandoned their avocations and joined the ever-increasing throng that pressed to the ports of the Pacific on its way to the north.

In a less but not inconsiderable degree Europe was affected. From the British Isles, from every country of the continent, and especially from the Scandinavian countries, men crossed the Atlantic on every steamer that sailed, bound for the same goal.

Close behind the army of gold-seekers, catching up with them, mingling with them, was the army of camp followers who expected to grow rich catering to them; road-house and restaurant people, tradesmen of all sorts hauling little stocks of goods with them, liquor-sellers, tinsmiths, tailors, bakers, and barbers.

And the parasitical class kept the caravans close company; women of a certain kind with their bullies and managers; gamblers, crooks, confidence men—the underworld spewed them out in thousands to take their

chance of fortune where laws were lax and "everything wide open."

San Francisco and Portland, Tacoma and Seattle, felt the stimulus to their trade of these sojourning and purchasing pilgrims; Seattle in particular, which became the chief port of embarkation, grew rich in the business of outfitting—not entirely to its honourable reputation if the legends that still linger in the north are to be credited.

The shipping of the coast was insufficient to meet the demand, and steamboats were hastily sent around the Horn, while every ship-building yard of the Pacific Coast was working at full stretch.

What was the country whither they were bent? On the verge of the arctic regions, with a winter climate surpassing in severity the regions of the pole itself, it was walled and ramparted from ingress at one end by lofty, glacier-covered mountains, and at the other end could be reached only through a fog-enshrouded, little-known sea, and then for no less than sixteen hundred miles up a great and rapid river.

In the fall of 1897, and even during the winter that followed, the stream began to beat upon the barriers of the land and to pass them, but it was in the spring and summer of 1898 that the great rush came. It was not possible to make preparations to handle such multitudes. They started, and then swamped, the towns of Skagway and Dyea, they swarmed like black ants up the snow-covered passes, laden like beasts of burden. Many turned back daunted by the enormous difficulties

that loomed before them, but many passed on, and with infinite toil reaching the waters of the interior, launched their rude craft and descended upon the Klondike,

It was not in the multitude itself that the movement was unique. Thirty thousand is the most authentic estimate of those who went to the north from 1897 to 1900. Far greater numbers flocked to California during the wild stampede of the middle of the last century; eighty thousand arrived in the year 1849; and as many as five hundred ships, deserted by their sailors, tossed idly in San Francisco Bay at one time. Australia saw an even larger migration three years later, upwards of one hundred thousand gold-seekers entering by the port of Melbourne alone in 1852. It was not in the multitude, but in the conditions, that the Klondike Stampede was without precedent. Never before had a new gold region been so remote and inaccessible; never before had such masses of men flung themselves upon an arctic wilderness, devoid of human sustenance as most men use those words.

There was indeed already developed amongst the hardy men who had gone in twos and threes to the north a technique of the arctic wilderness, largely learned from the Indians. Pulling their own sleds,* living largely on the game and fish the country afforded, they made long journeys up and down the frozen rivers, over rough mountains, through the dense scrub forest. They left no

* We are disposed to be a little scornful of man-drawn sleds these days, but for distance covered and difficulties overcome I do not think McClintock's record of journeys made in this way in 1853 on the Franklin Search has ever been surpassed by dogs or other means of traction.

records, but over an astonishingly wide area there were few streams their boats had not furrowed, few mountain passes their sleds had not crossed, before the world even heard of the Yukon gold-fields. Scarce a new "strike" anywhere nowadays but reveals some traces in its vicinity of early, forgotten prospecting.

But of what avail was this dearly bought woodcraft and snow-craft to hordes of men fresh from a life in the office and the shop? They had neither time nor opportunity to learn anything, and they pitted their inexperience and ignorance, their little sheltered city-bred habits and customs, against the savageness of nature in her sternest moods and most naked fastnesses. Hundreds of them perished. They died of exhaustion, of starvation, of pneumonia. They were drowned, were frozen, were smothered in snowslides; they lay in log cabins rotting with scurvy. And those that reached Dawson herded themselves together and fouled their own surroundings with such disregard for health and decency that an epidemic of typhoid fever swept away scores of them.

Other routes there were, through the interior of British Columbia and through the northwest territories, even longer and more onerous. The Stikine route had many victims, but the so-called "Edmonton route" had, justly or unjustly, perhaps the worst repute of all. Of those who entered upon it, some took two years to reach the Klondike, consuming or abandoning all they brought with them. Some of them, passing the streams they should have ascended to reach the tributaries of the

Pelly, went so far north that there was nothing for it but to make the difficult Rat portage, and so descend the Porcupine, to find themselves on the Yukon three hundred and fifty miles below their destination.

Here at the foot of the massive mountain with the naked scar lies what is left of the city the adventurers built. The flat on which it stands was partly made by the landslide to which the scar dates back; the rest of it was made, I think, by the swift little river that comes in just above, with a swampy, sandy mouth, a little river famous throughout the world. The Indians called it "Trondeg"; in some mysterious way the white men corrupted that name to Klondike.

The Yukon contracts greatly just before its confluence with the Klondike and sweeps in its narrow bed very swiftly past Dawson (named by Ogilvie for the surveyor-general of Canada of that day). The steamboat wharves line the lower part of the river-front, where the remaining business congregates; the barracks of the Northwest Mounted Police, the handsome residence with its beautiful grounds of the Commissioner of the Yukon Territory, and the attractive and well-kept St. Paul's Church of the Church of England, line its upper part, with an intermediate stretch of empty buildings and boarded-up stores.

I know not how to describe Dawson; there are so many substantial buildings, as befits the capital of the territory (though they are all of wood), so many attractive and hospitable homes, so many brilliant gardens, that one would gladly shut one's eyes to its

DAWSON, THE KLONDIKE, AND THE YUKON FROM THE MOOSEHIDE MOUNTAIN.

steady, gradual decay. I never saw it in its full prosperity; in 1904, when first I visited it, although only seven years old, it was past its prime. That was the year of the "rush" to Fairbanks, and boatload after boatload of people was leaving for the new camp a thousand miles away, never to return. That is the sad thing about any placer-mining town. However it may grow and flourish, however comfortable its homes and however attached to them people become, however the amenities of life may be fostered and developed, however the arts and trades may be established, however, year by year, as its market-gardens and hothouses grow more and more productive, conditions of living become more and more pleasant, the whole thing is without substantial foundation, and inevitably temporary. By and by the alluvial gold will all be gone; it is not like quartz veins that extend amazing distances into the earth and by determinable tests may last at a given rate of extraction for a century. There is just so much of it, lying in the gravels on the bed-rock of certain creeks, and when the creeks are stripped and the gravels are removed and the gold taken from them, the game is up. There is a certain modern aftermath of dredgers and steam-shovels and hydraulic jets, and Dawson is living on that aftermath now, but that also is temporary; and one does not see what expectation or even hope may be entertained that Dawson will revive, unless quartz should be discovered in its vicinity, of which there does not now seem much chance. It is a wrench to give up a pretty home with a beautiful garden, on which time

and loving care have been lavished, and many a good woman has had a heavy heart and has wept bitter tears at the necessity of it, but what are people to do when the placers play out? They cannot live by selling one another cabbages and taking in one another's washing, as some seem to imagine, nor even by fishing in the Klondike River, as George Carmack and his Indian companions were doing when Henderson told them of his discovery on Gold Bottom. The amenities would not long be preserved in a society so supported.

There is only one thing to do—get out while you can; get away to other mining-camps, to fresh discoveries of placer-gold, where money is plentiful and business of all kinds is brisk. The man does not matter so much; he is of a restless, roving disposition or he would never have turned to this life; but sometimes he is married to a gentle little woman who longs for a home, and starts instinctively to make one wherever she may be, and then I am sorry for his wife.

In the nature of things it must be so with all placer-mining towns in the north. I will not say it must be so with Fairbanks, because Fairbanks just now is in a very sensitive stage, and there would be a howl from its newspapers and I should be called the Prophet of Despair again. Fairbanks may be an exception: it may be able to live from its market-gardens and its laundries and the government railway that is building to it. And, of course, there is always the chance of quartz wherever there are placers. The placers *came* from quartz; geologists are agreed about that; the question is, were all

the quartz stringers disintegrated and denuded in making the alluvial gold? Quartz would set Fairbanks permanently on the map; quartz would revive Dawson; and nothing would give me greater pleasure than to hear that it had been found near them both in large quantity.

I shall not be expected to go back into the creeks with the visitor in a book that touches mining only as mining touches history or literature. I had rather climb the hill behind Dawson again, while waiting for a boat, and get the fine view up and down the river and back to the Rocky Mountains in the distance, which it gives.

But there are automobiles which will take the visitor over good roads out to the creeks which were the scenes of the sudden bewildering fortunes of early days, and show him the huge monsters that have superseded the man with the pick and shovel; monsters with an endless chain of buckets for a proboscis, who thrust that snout into the bowels of the creek and dig up sand and gravel by the hundreds of tons and search every ounce of it for gold. They are making money for their masters, notwithstanding the millions that were expended in bringing water and electric power from afar, and will make money for some years yet. Each one does the work of a hundred men, I am told—or is it two hundred?—but since they do not eat, nor need places to sleep, nor wear clothes, nor get sick and send for the doctor, they are a poor substitute for the men they do the work of, so far as maintaining a town is concerned.

When the visitor returns he may spend an hour or

two looking at the deserted places of festivity where those bewildering fortunes were spent in many cases almost as fast as they were made. I met a man freighting with dogs on the Koyukuk some years since who in these palmy days of prodigality offered a dance-hall girl her weight in gold-dust to marry him. The girl refused, telling him she would get his gold-dust anyhow. She got it!

CHAPTER II

THE UPPER YUKON—FORTYMILE, EAGLE, AND CIRCLE

Two or three miles below Dawson, by an interesting mountain trail, giving fine views to those who do not mind a little climb, is the native village of Moosehide. The mountain was named Moosehide Mountain,* from the shape of the permanent scar it bears, long before Dawson came into existence, and presumably gave name to the village. A church and a little schoolhouse and a number of cabins cluster at the mouth of a creek.

I have said nothing of the natives of the upper Yukon because I know nothing about them save in a general way. They are not numerous and they are much scattered; I judge that in some respects their condition is worse, and in some respects it is better, than that of the natives of the middle and lower river. The salmon traverse the Yukon River quite up to its head, perhaps the most astonishing extent of fish migration in the world, but the numbers taken steadily diminish as the river is ascended, and above Dawson this fine fish is no longer a staple article of native diet.

On the other hand, the government has perhaps been more wisely alive to the needs of its Indian pop-

* Schwatka mentions the name, and, strange to say, does not even try to overlay it with some German or Scandinavian or Polish scientist.

ulation than has the Government of the United States. I have no wish to praise the Canadian administration at the expense of our own in this or any other matter, but it is notorious that the laws against the selling of liquor to Indians have been far more vigorously enforced on the British side of the boundary: a result again due to that efficient body—the Northwest Mounted Police.

But it seems altogether impossible that a tribe of Indians should live in the near neighbourhood of a considerable white town without suffering degradation. There are always white men eager to associate with them to debauch the women and make profit of the men; insensibly the native virtues are sapped, the simple native customs undergo sophistication into a grinning imitation of white customs; jaunty cast-off millinery displaces the decent handkerchief on the women's heads, cracked patent-leather shoes and even French heels displace the comfortable home-made moccasins on their feet; the men grow shiftless and casual, picking up odd jobs around town and disdaining the hunting and fishing by which they used to live.

Each year a band of Indians from the Peel River (a tributary of the Mackenzie) make a long overland journey to Dawson with their furs, for purposes of trade, and their stalwart vigour of body and independence of manner no less than the gay bravery of their wilderness attire impress the citizens of Dawson very favourably, and much is made of the contrast which they present to the degenerates of Moosehide. Yet I have heard

Bishop Stringer say that when first he knew the Moosehide Indians they were in every respect the peers of their Peel River brethren. It is as true in the Yukon Territory as it is in Alaska that he who would see the Indians at their best must see them remote from the settlements of the white man.

More than once reference has been made in passing to the activities of the Northwest Mounted Police, and I am glad, before leaving the Yukon Territory, to speak of them at a little more length.

There is a very fine illustration of the use and influence of *prestige* in the operations of this frontier corps. Of smart soldierly bearing, of a notably unconcerned manner, clad in conspicuous scarlet coat and striped trousers, they are rarely, if ever, armed with anything beyond a little riding-crop, which, with the spurs jingling at their heels, is all that is left in the north to remind themselves and others that they are *mounted* police. Yet the mere presence of one of these men, though every one knows he bears no arms, will be more effective in quelling disturbance, in preventing murderous violence, in securing the persons of offenders, than half a dozen slouchy deputy marshals or deputy sheriffs would be, bristling with automatic artillery. The ruffian knows that this scarlet constable is not armed, but he knows that the Dominion of Canada is, and that the whole power of the Dominion of Canada, nay, the whole power of the British Empire, is behind that scarlet coat. He knows there is short shrift for those who resist authority, that the law is faithful and prompt, and that no cost

or pains will be counted too great in hunting down and punishing offenders.

I have never seen any approach to military arrogance amongst these men, nor have ever heard it complained against them in a population that would certainly be quick to resent anything of the sort; there is no "pride in their port, defiance in their eye." So marked is the quiet indifference of their manner that I think it must be one of the traditions of their *esprit de corps*. Yet let need arise for their services and they are very presently on the spot. They remind one of Charles II's saying about Sidney Godolphin, that he was "never in the way and never out of the way."

In this arctic frontier country their services are very varied. Every private in the corps has the authority of a civil constable or deputy U. S. marshal; every officer has the legal authority of two magistrates (for by Canadian law two magistrates sitting together have wider jurisdiction than either of them sitting alone). They have patrolled their third of the Yukon River with police-boats in the summer and dog-teams in the winter, from the first, while the remaining two-thirds has no sort of police-boat or police-patrol to this day.

It was stated in the Dawson newspapers some time ago that in the twelve years that the Yukon Territory had then been organised, there had been thirteen murders committed—and twelve murderers hanged. One would not care to print the figures for Alaska in contrast.

But these strictly military and constabulary duties

are only a beginning, and there is scarce any office of public utility that they do not on occasion fulfil.

They are a rescue corps. Is some expected traveller of any sort overdue in severe weather (as they learn by telegraph along the trail), a swift dog-team is despatched with a couple of men to his relief; does some prospector disappear in the hills altogether, they will rake that country with a fine-tooth comb, but they will discover some evidence of his fate if they be unable to discover the man himself. Is there mail for whalers wintering at that last remote outpost of civilisation, Herschel Island, a detail of police is despatched six hundred miles across the trackless frozen wilderness to deliver it; and on one such journey of late years the men, missing their way, perished of exposure and privation. A citizen of Alaska may be pardoned, however real his patriotism, if he look with longing eyes upon this admirable corps; if he wish that our idle military, our unpaid and often illiterate magistracy, our politician deputy marshals, our whole clumsy inefficient system, could be superseded by such an organisation as this; if he regret that the prestige of the Great Republic has no similar representation in the north.

A detailed description of hundreds of miles of scenery into which the same elements constantly enter with only slight variety of arrangement would probably prove intolerably tedious to the reader, and certainly would to the writer. The irregular, tree-covered rocky bluffs rise on each side of the river; what boots it that here they are higher and here lower, here closer and here

farther apart, now more continuous, now more broken? There would not, I suppose, be anything positively illegitimate, however much that was morbid, in a desire to have a complete description of the banks of this river, their geologic character, their altitude, their vegetation, their colour, their contour from Whitehorse to St. Michael, nothing that would reflect upon a man's antecedents or Christian character, but, under submission, the present writer would leave such task to others.

Here is a stretch of forty-five or fifty miles from Dawson to Fortymile with nothing specially distinctive about it that I can remember or that the maps or my diaries recall. Fort Reliance is gone; not a vestige, I think, remains, and Dawson has taken its place as a distance-measuring base; but the old place-names that depended on Fort Reliance survive, and Fortymile is still Fortymile.

After all, it is human association upon which scenery must depend for much of its keenest interest. The Matterhorn was a splendid rugged monument of nature all down the ages, but since Whymper's pertinacious and indomitable attack its rock towers gleam the brighter in all men's eyes; even the terrible accident that attended his success has given it a tragic interest that would not have remained from a safe return; and that most beautiful of volcanoes, Cotopaxi, lifts its graceful cone the fairer and clearer that he spent a night on its summit. No man has really seen the Grand Cañon of the Colorado who did not know at the time of his visit of the daring and romantic journey of John Wesley

Powell, the one-armed veteran of Shiloh, who launched his boat upon unknown waters and plunged a thousand miles through cataracts and cañons ere he reached the last stupendous chasm of all. I know not just what physical characteristic makes the English Lakes, at certain times and seasons, the loveliest perhaps in the world, or if it be physical characteristic or not, but Wordsworth has thrown a spell upon them that one cannot analyse and cannot resist. The "Thundering Smoke" one might think had sufficient interest as the greatest of all waterfalls, but it has yet more, that, sick and weary, after long, painful search, David Livingstone at last heard the thunder and saw the smoke.

It is a rich vein, but this is not the place to pursue it; let the reader pursue it for himself. Let him ask himself if Mt. St. Elias would hold so much magic in its name if the eyes of Vitus Bering and his doomed companions had not caught a glimpse of its everlasting snows and knew thereby that they were hard upon the land they sought, and if to that old glamour a new interest were not added when a King's brother, disdaining soft delights, laboured for weeks to reach its summit and set the flag of Italy thereon. Even mere points in the arctic waste glow with a faint but fascinating radiance from the names men gave them in the stress of their endeavours; the "Isles of God's Mercy," where Henry Hudson found shelter from the enveloping ice on his last voyage; the "Anxiety Point" and "Return Reef" of Franklin—that Sir Galahad of explorers whose Eskimo name means "the man who does not molest our women"; the "Mercy

Bay" of McClure in Bank's Land, the "Thank God" harbour of poor Hall on the *Polaris*.

Just so is this great Yukon River the richer in interest for the men who have travelled it, the richer for Schwatka's clumsy raft—"of all methods of navigation undoubtedly the oldest and undoubtedly the worst," he writes with pardonable irritation as its corner hits a bank and rips a log off; the richer for Robert Campbell and the other adventurous scouts of the Great Company, yes and the richer for McQuesten and Harper of Fort Reliance, who followed the miners up to the Stewart River and back again to the Fortymile with their trading-post, and thus made prospecting possible; "The Father of the Yukon" is the name the miners give McQuesten. And I have tried, and shall try, to gather up such interest of association as the river has, and beguile the reader with it in the long stretches that yet lie before us, when I have sufficiently indicated their general character. I find added interest in this very stretch of river because O. Henry speaks in one of his stories of "slipping down in a sled from Dawson to Fortymile," using it as a simile. From this and other Klondike references I am disposed to wonder if in some of the unaccounted-for years in the life of this great story-teller he may have visited the north. How else should he know about the ptarmigan in the Chilkoot Pass changing their plumage?—or was he merely quick to pick things up from others?

The Fortymile River, which flows into the Yukon on its left bank, has its mouth in Canadian Territory,

but about twenty miles up it crosses the boundary-line, so that the Fortymile gold camp is (I had almost written "was") partly in one country and partly in another. It was the earliest of all Alaskan camps, and, with the exception of the Stewart River diggings, the earliest of all the northern gold camps.

In the summer of 1886 two men found coarse gold on bed-rock, and since placer-miners are much more eager for coarse gold than fine, and this was the first discovery of coarse gold in the Yukon country, the diggings on the Stewart were generally abandoned and the men flocked hither.

I met one of these old Stewart River and Fortymile pioneers soon after I came into the country. It was at Circle and he had come in a poling-boat all the way from the Koyukuk, having descended that stream from the camp at its headwaters. He told me that he was going back to have a try at some ground on the Stewart River that looked good to him twenty years ago. Now, the mouth of the Koyukuk is upwards of six hundred miles below Circle, and Circle is nearly four hundred miles below the mouth of the Stewart. And I asked him: "Why didn't you ship as a deck-hand on a steamboat and get paid for going up?" He answered simply, "I did," and as I looked at him and waited for an explanation, he added: "But I don't allow no man to talk to me the way that mate talked, so I made them put my boat in the water and I've brought her up myself." Here was a man well past sixty years of age, I judge, who had already propelled that long narrow boat tied

up to the beach upwards of six hundred miles by the force of his arms, and was cheerfully contemplating another four hundred miles of such progress. He told me he averaged about twenty miles a day and said he didn't mind it much except in the Flats: but "them blamed Flats is the meanest part of the river; a man don't know where to go, he has to cross over all the time and loses a mile every time he crosses over." I confess I was struck with astonishment and admiration at this quiet, independent old man who had rather pole his boat a thousand miles up the swift Yukon than submit to the hectoring of a steamboat mate. This was the stuff those Stewart River pioneers were made of, and I think the Yukon River is the richer in interest for them. I never saw him or heard of him again; I forgot to ask his name; but I hope he reached the ground that looked good to him twenty years before and that it proved as good as it looked then.

Ogilvie, who came into the country the following year, says that the estimated output of the Fortymile camp that season was two hundred thousand dollars. Since this was the only base of supplies on the river, almost all the prospecting for some years to come was done around this centre, and many gold-bearing creeks were discovered. It was from the Fortymile base that the prospecting was done which discovered the gold-bearing creeks of the Circle camp a little later, and from the Circle camp the prospecting reached over to the Tanana and ultimately established the Fairbanks camp.

But the Fortymile camp is almost played out. The

newer camps have taken away the men until comparatively few are left, the Iditarod stampede of 1910 taking most of them. Yet men may still be seen "rocking on the bars" and making "better than wages" as they did thirty years ago, and I suppose there will always be some desultory mining in the region of this river, since the bars seem to renew themselves to some extent every year. I saw a couple of small dredges upon the best of these bars when I passed down the Fortymile a few years ago, but I think they are not now in operation.

It is not hard to understand the lure of a life that in three months' work can "take out a grub-stake" for the whole year with naught but a home-made rocker and "long tom," which is a can at the end of a pole. To an artisan or factory operative—even to the privileged workers for Henry Ford—to any man who labours eight hours a day year in and year out, there must be a great attraction in an occupation that leads a man into the open air all the summer-time, and in that summer-time provides a sufficient maintenance for the rest of the year. There are many men so situated in Alaska, besides the "snipers" on bars, men who have claims on shallow creeks, where single-handed while the water runs they can sluice out their year's support. They have no large money in their claim, but there are nine months in which they can prospect elsewhere for the fortune they never cease looking forward to. To a man not dependent on the distractions and amusements of a city, not dependent on the society of others, who is willing to forego the satisfaction and comfort of a wife

and a home of his own, it is a life that lures. And some of them have had homes of their own, but grown sick of cities and civilisation, have cut themselves loose, honourably or otherwise, and have plunged into the wilderness and buried themselves therein.

Since it is the down-river "port of entry" of the Yukon Territory, I suppose a custom-house will be maintained at Fortymile; but there is not much else left save a little chapel of the Church of England, a police post, a store, and a road-house. I do not think the store can do anything like as much business as Harper and McQuesten did when they first established their post, thirty years ago, and one trip a year of one little steamboat supplied the whole Yukon. Sometimes there are a few Indians here and sometimes there are none. There used to be many, and Bishop Bompas had a school here long ago, but they are a binational tribe, these Indians of the border, and are sometimes subjects of the British crown at Fortymile and sometimes wards of the United States at Eagle.

The Fortymile River has many branches and tributaries, spread like a network over a large area, the headwaters of its south fork reaching within a few miles of the Tanana River itself at Lake Mansfield, and the rough, broken country it drains is one of the greatest caribou countries in all the north. On their annual migrations they cross the forks of the Fortymile by hundreds of thousands.

A little below Fortymile, on the other side of the river, Coal Creek comes in, and here an English corpora-

tion has spent of late years several millions of dollars, I am told, in an ambitious but not successful attempt to generate electric power from the fuel that is mined and transmit it overland by wires to the creeks of the Klondike for the operation of dredges. I suppose it is the wide experience in many lands of the Guggenheim corporation that makes it successful beyond all others in enterprises of this sort; enterprises in which a slight error of judgment may entail enormous financial loss.

We pass a lofty detached rock that has evidently been violently split from the bluff of the left bank and transported right across the river by some local convulsion, a conspicuous landmark that no one could miss. Schwatka, eagerly consulting his list of savants, calls it after a prominent member of the Paris Geographical Society, but it was "Squaw Rock" before his day and it is "Squaw Rock" yet. The river is more open here and more diversified, and gives many fine arrangements of mountain and water as the steamboat sweeps around its curves.

We are now on the confines of the Yukon Territory, and as we approach the boundary-line visitors commonly crowd the decks to note the moment when they shall pass into the territory of the United States. The determination of this boundary-line was an interesting and not very easy matter. Schwatka's commission required him to make a rough estimate of its position, but only a very rough estimate indeed could be based upon the dead reckoning of the raft's drift, and I cannot find from his narrative that any other method was essayed.

Schwatka placed the line just below the town of Eagle, and the bold conical bluff that rises there, now called Eagle Mountain, he named Boundary Butte; an error of about twelve miles.

In 1887 the Canadian Government sent William Ogilvie to make an accurate determination of the line at its intersection of the Fortymile and Yukon Rivers, and of that undertaking we have a full and interesting account. Taking an island in the Chilkat River, the latitude and longitude of which had been determined long before, as a base, a line was run from point to point across the mountains and lakes and down the river, until it appeared that the neighbourhood of the boundary was reached. Here Mr. Ogilvie with his assistants made camp for the winter and sat down to determine by astronomical observations the position of the 141st meridian west from Greenwich.

Since there was no telegraphic communication with the north in those days, the modern precise method of such determinations was unavailable, and reliance had to be placed on a series of moon-culminations, or transits of the moon over the meridian of the place. Of these Ogilvie secured twenty-two, and from them was able to calculate his position with such nicety that twenty-two years later, when the telegraph-line ran along the river and modern methods could be used, the Ogilvie line was found to be only a few score of yards out.

The general character of the timber along the Yukon, about which I have often encountered misconception in unexpected quarters outside, will, I think, be fixed in

the reader's memory by an incident which Ogilvie narrates. To lighten the loads that must be packed over the pass he had left behind the massive and ponderous tripod of his transit, relying upon finding a tree that would serve the purpose, since, once set up, it would not have to be moved again. He needed a tree that should be twenty-two inches in diameter five feet from the ground. The neighbourhood of the boundary was sought over diligently for three days for such a tree without avail, and he had to make shift with a tree eighteen inches in diameter, the only one that could be found even of that girth, most inconveniently situated on the side of a bluff; most inconveniently, for the place of the tree necessarily determined the site of the permanent winter camp, which had to be close to the observatory.

When Ogilvie had finished his task, a lane was cut through the timber to the summit of the hill, and carried across the river and up the mountain on the other side. The International Boundary Commission cut a similar lane when the final determination was made, and the two parallel lines stand out a little distance apart. Ogilvie's lane, however, begins to be much obscured by underbrush.

Crossing this line, we are once more in Alaska. They are strange things these international boundary-lines. The rocks and trees are just the same on one side as the other, the shore-line is continuous, there is nothing but this artificial vista through the forest—yet one side is subject to one set of laws and the other to another. Cut

some trees down on the Canadian side, whipsaw them into lumber, build a boat with the same and launch it on the water, it is a "British bottom"; when it reaches Eagle it can proceed no farther. Tear it to pieces, it becomes merely "Canadian lumber," on which there is slight, if any, duty. It may now be built into a boat again and the voyage resumed. This does not apply to skiffs and such small craft, but it does, or it did a few years ago and I think it does yet, to anything larger. I dare say the reverse is true and that a similar impediment bars the entrance to Canadian waters, but I do not know, for there is no passage of such craft up-stream. It all seems very foolish and petty; indeed, a man who reflects upon things must see much that is foolish and petty about the whole system of customs; there is, moreover, an unavoidable sense of the invasion of personal right and dignity whenever a customs officer in New York rifles a trunk in search of what it is thought may be concealed; there is an even stronger feeling of the same kind when the Canadian officers at Whitehorse pass their hands, however gently, over the bodies of outgoing travellers to detect the smuggling of gold-dust, on the exportation of which a royalty is charged. The whole business seems an anachronism; it seems to belong to the times when a man could not go from one place to another without a passport; when every possible hindrance was thrown around the movement of men or merchandise; when every little stretch of the Rhine had its own exaction, with a chain across the river and a castle on a rock, to enforce it.

Some day the world, however much it seems going backward to-day, will resume its march, and reach a point of comity and common sense where it will sweep all such vexatious restrictions away; some day the time will come when a boat may navigate what waters it pleases and touch at what points it will; when a man may sell whatever he has to sell wherever he can sell it, may buy what he wishes and take it where he likes.

I have wondered whether the customs collection at Eagle pays for itself nowadays, or whether the salaries and other expenses of collection do not exceed the revenue. I am certain they do on the Fortymile, for twenty miles or so up that stream, where the 141st meridian cuts it, there is a little American custom-house that does virtually no business at all. Yet lest some miner from the American side should go down to the mouth for his "outfit" instead of crossing the hills to Eagle, that lonely little post with its exile of the internal revenue is still maintained. Sometimes the grand old English lexicographer's famous definition of "excise," on which the commissioners of excise took counsel's opinion, and were advised that though they could prosecute him for it they had better not, appears to apply almost as well to "customs."

But we are in an "American bottom," and we go slipping by American trees and American rocks, through American waters, to the first American post on the Yukon, the town of Eagle, and here we lie some hours while the customs examination takes place.

Immediately upon Mr. Seward's purchase of Alaska

in 1867 a detachment of troops was sent to Sitka and the army took charge of the country. But in 1877 the troops were entirely withdrawn and for seven years there was no sort of government in Alaska or of Alaska whatever. I do not know that such large territory belonging to a great civilised power was ever before, in modern times at least, left utterly without any attempt at government. The white people of Sitka had to call upon a British man-of-war to rescue them from an Indian uprising during this time. When Lieutenant Schwatka came down the Yukon in 1883 he says that it was a debatable point whether his expedition was not strictly an illegal one and in direct violation of the President's order, since the executive order of withdrawal had provided that the military should thenceforth exercise "no control whatever" in the Territory, and it was impossible to send in a military party that should not exercise control over its own members. In 1884 a governor without any power was appointed by the President and the laws of Oregon were spread over the Territory, but without any attempt to enforce them.

It was not until the Klondike excitement that government attention was drawn to Alaska, and then two officers, Captain Ray and Lieutenant Richardson, were sent in to select suitable sites for forts in the interior. Two such were built, Fort Egbert at Eagle, in 1899, and Fort Gibbon at Tanana, in 1900, garrisoned each by two companies of infantry, of which the former was abandoned twelve years afterwards and the latter still remains.

The first United States district court in the interior was established here with its officers shortly after, and Eagle remained for a few years the centre of the newly erected civil administration. With the building of the much more considerable town of Fairbanks in 1904, however, the court and its officers were transferred thither, and the town declined, and with the abandonment of the army post in 1911 it declined still more.

Eagle is pleasantly situated, about a hundred miles from Dawson, on the left bank of a picturesque portion of the river, with an attractive view up-stream and the fine mountainous bluff that has been referred to, rising right out of the river just below. It has its custom-house, its court-house, two stores, a post-office, and an Episcopal church (for we have left the Church of England behind us and are entered upon the portion of the Yukon served by her American daughter)—and contiguous to the town, just below it, is the military compound with its gaunt, deserted buildings. Three miles up-stream, on the same bank, we passed unmentioned an Indian village with its school and church. This native mission and the white town are served by the same missionary.

There is still some mining on the Fortymile and on the Seventymile below, and still some prospecting, though this is probably the best-prospected region of Alaska, and as a port of entry Eagle has some official business; enough, altogether, one hopes, to maintain the town at its present stage.

Soon after the building of Fort Egbert much govern-

ment interest and activity were aroused in favour of an "all-American route" to the interior of Alaska, and a trail was surveyed from Valdez on Prince William's Sound across country to Eagle. A "strategic" military telegraph was afterwards constructed along the line of this trail and was maintained for a number of years at great cost, the stations being provisioned by pack-trains. But no one ever used the "all-American route," and there was no one living on it to send telegrams, nor any strategy that was served by its existence, so at length both were abandoned. The line still stretches across all those hundreds of miles of wilderness, but gradually the wire will rust and the poles will rot and fall, and the forest will close in on the right-of-way clearing.

Ten miles or so below Eagle a high bluff is passed that has a very remarkable exposure on its face of hundreds and hundreds of narrow parallel layers or strata of varying colour, folded and crumpled until they roughly suggest a wavy pattern of fabric, from which appearance the bluff is known as the "Calico" bluff. When one remembers that each of these layers represents a separate, slow deposition of sediment from water, and that some geologists, working back from the measured rate of present denudation, or removal of earth-surface by water, to a corresponding rate of deposition, reckon six thousand years as the average time required for the accumulation of one foot of sediment, we get some slight hint from this bluff of the age of the crust of the earth.

I never pass that bluff without fresh conjecture as to its history, without wishing that I knew enough about

geology to read the riddle of this writing. How came these layers of different material, imposed one upon the other with perfect uniformity and precision from the top to the bottom of this great rock, and heaven only knows how far beneath the present visible bottom? That it was a continuous deposit the sharp division between each layer forbids us to believe.

Was it, then, an ancient sea-bed that by some mysterious plutonic clockwork rose above the water when it had received a stratum, and then sank again to receive another?—rising and subsiding as many times as there are individual layers? That is a pretty heavy tax on one's credulity. And if so, whence these variations in its colour, and therefore, one supposes, in the nature of the deposit?

I think there is a great field for some one with adequate learning, and with brains and imagination (which are quite other matters) to occupy with books about geology. Is there any other subject of which the average man of education and culture is so ignorant?—any other subject the books on which are so generally dry and technical and lifeless? I remember with pleasure Hugh Miller's "Old Red Sandstone" and "Testimony of the Rocks," as a boy devouring what I could lay hands on, but Hugh Miller was a man of letters as well as a geologist, and there have been few such. It is not altogether the average educated man's fault that he is so ignorant of this great subject.

And there have been all sorts of government geologists sailing up and down this river for the last twenty

years, and printing all sorts of reports; yet so far as I know, and I try to keep the run of their writings, though I certainly do not pretend to read them all, not one word about this striking geological feature that attracts the notice of even the most unobservant visitor, the Calico Bluff, has ever been published. One would think they would glue themselves to that rock until they had, if not deciphered its story, at least exhausted what they could learn from it.* If I were a wealthy man I would offer a considerable prize for the best monograph on the Calico Bluff.

Fifteen or twenty miles farther, on the left bank, we pass the mouth of the Seventymile, which of old was counted seventy miles from Fortymile. 'Twas a vicious custom this place-naming by miles, and the cause of much confusion. Even Ogilvie falls into the obvious error of calling this place seventy miles from Fort Reliance. At the mouth of this stream Star City was built upon the occasion of a stampede in 1899 or 1900, but even the few deserted cabins I knew ten years ago have fallen and gone, and Star City has no place at all, except upon some of the maps that are reprinted without revision.

* This passage must not, however, be taken as though stricture upon the members of the Alaskan Geological Survey were intended; their department has its policy and they have their instructions, and I recognise, even though I may regret, that both must be concerned primarily with the "economic development" of the country, and that metalliferous and carboniferous formations engage their attention almost exclusively. In proportion to its stinted resources, the Alaskan Geological Survey is probably the most efficient department of government service in Alaska to-day. If I had the power I would turn over to its chief, Doctor Alfred Brooks—say the cost of maintaining the army post at Tanana; then we would have maps and surveys!—and perhaps a monograph on the Calico Bluff as well.

THE TOWN OF EAGLE.

Now we come in sight of the bold, rugged mountains of Sheep Creek* on the right hand, mountains that retain snow upon their tops well into the summer, and are conspicuous by their height for a considerable distance up and down the river. The international boundary is very close to the river along here, and it is certainly fortunate that it does not actually cross it again, or we should have double rows of custom-houses to deal with; and what the two nations would have done had the Yukon wound back and forth along the 141st meridian instead of conveniently drawing away from it to the westward, is an amusing subject for speculation which the reader may pursue if he wish. No white man knew anything about the course of the Yukon when that boundary-line was agreed upon, though Sir Alexander Mackenzie, it is said, missed knowing it only through the timidity of an Indian guide as far back as 1789, when he explored the river that bears his name.

So far as imposing mountain masses are concerned, the finest portion of the Upper Ramparts lies just before us now. I think the one hundred and seventy-five or one hundred and eighty miles of river from Eagle to Circle would be counted exceedingly picturesque anywhere in the world. Each bend brings a change in the composition; now the sharp peaks of the Sheep Creek mountains dominate the scene, now the enormous bulk of the cliffs below Nation, now the lofty tableland of the bluffs opposite Washington Creek.

* Its easy Indian name of Tatonduk has, I am sorry to say, almost entirely lapsed.

These names, Eagle, Star City, Nation, Washington Creek, Fourth of July Creek, are relics of the patriotic exuberance with which citizens of the United States who had felt themselves cramped in Dawson, gave expression to their emotions when once more they were settled in United States territory. "Nation" puzzled me for a while, but I think it belongs to that group; there were other nations, I suppose, but only one Nation.

Every river of considerable length must in time of freshet gather a large amount of driftwood, but in the great rivers of the north, draining hundreds of thousands of square miles of dense primeval forests, it is a more striking feature than in those which flow through occupied and cultivated lands.

At any high level of water the visitor will find the river burdened and its navigation hindered by forest débris in immense quantities, and in every stage, from trees in full leaf to bleached and rotten logs. Sometimes the driftwood is so thick that steamboats are unable to proceed and must tie up to the bank until the water subsides and the hindrance abates.

At first sight the visitor is likely to be impressed with a feeling of the great waste of wood that is going on; but when he pursues his voyage to the barren regions of the mouth of the river and of the adjacent shores of Bering Sea, he will see that there is no more waste than necessarily accompanies the great operations of nature. This driftwood of the Yukon is the only wood the Eskimo knows; thrown up in piles upon the desolate beaches of treeless seas, the Eskimo makes his igloo beside them.

Just as the salt water sends up its myriads of fish to feed the people of the interior, so the interior sends down its myriads of logs to warm the people of the coast; and to some it will seem merely the accidental philanthropy of the blind forces of nature, and to others the loving providence of an all-seeing God working through those forces.

Not all at once does the driftwood reach the sea; the first freshet may no more than lift it from its bed and carry it down some tributary of the great river. So soon as the water drops the driftwood lodges on a sand-bar and lies there until another rise comes to transport it a little farther. It may take several years to complete the voyage, hence the great part of the wood upon the arctic coast is much weathered and bleached.

The reader will consider that, while an ordinary rise in the river gathers little more wood than lies close around its banks, any unusually high water reaps a much richer harvest. The innumerable little creeks and rivulets are swollen far beyond their usual size and reach back deep into the heart of the forest, floating old windfalls and moss-grown trunks that have lain prone for years. When the rise is general throughout much of the drainage-basin of the river—an unusual occurrence, since that basin is so great—the quantity of driftwood brought down is prodigious, and for a while any use of the river for navigation is impossible.

Collecting on sand-bars and on the shores of islands, the driftwood is an ever-present and unhandsome feature of the Yukon in every part of its long course.

The Yukon River is now flowing between two other important rivers, its tributaries at later stages of its course. If we went up Sheep Creek, forcing our way through the difficult cañon near its mouth and into the heart of the fine craggy mountains that have been referred to, and so out beyond, some fifty or sixty miles altogether, we should come to the Nahoni Lakes, from which the Porcupine River takes its rise. This river flows a little east of north until it is well past the 67th parallel, and then makes a great sweep to the south-west, falling into the Yukon at Fort Yukon just on the arctic circle.

The country thus enclosed is one of the least known parts of the continent. The 141st meridian passes through the middle of it, and the line of that meridian has been run with the utmost exactness from the Gulf of Alaska to the Arctic Ocean by a joint commission of Canadian and United States engineers, a vista being cut through the forest the whole way and bronze and concrete monuments set up at prominent points; altogether, it is said, one of the most difficult and creditable pieces of survey work and frontier delimitation on record. For a few miles on either side of that line the country is of course known; the rest is quite unknown and unmapped, any details on the maps in use being conjectural.

In the *Geographical Journal* of the Royal Geographical Society for September, 1916, Charles Camsell, of the Canadian Geological Survey, classes the Canadian portion of this region amongst the "unexplored areas" of continental Canada, and the part belonging to Alaska is in the same category.

Sparse bands of Indians live along some of the tributaries, notably on the Big Black River, fishing them and hunting over the adjacent hills; there is a quota of white men, as well as of aborigines, trapping over a considerable part of this country—much of the best Fort Yukon fur comes thence—but it has never been even roughly delineated and geographically it is unknown. It is said to be particularly full of bears and wolves.

In the opposite direction from the Yukon, that is, looking west instead of east, the Tanana River flows parallel with the Yukon for several hundreds of miles, one hundred and fifty to two hundred miles away, taking its bend of approach just below Fairbanks. In contrast with the country to the east, this region west of the Yukon is one of the best known in the north. Reconnaissance surveys have been carried almost all over it, and the maps of the "Eagle Quadrangle," the "Fortymile Quadrangle" and the "Circle Quadrangle" are careful and useful pieces of work.

The settlement at Nation has dwindled to not much more than a road-house and its appurtenances, though some small store may still be maintained; it was dependent on mining on the Nation River and some neighbouring creeks, of which little remains. The headwaters of the Nation River (it is no more than a large creek) interlock with the headwater streams of the Fishing Branch of the Porcupine, and at this point I understand that Porcupine water can be reached in about twenty-five miles from the Yukon.

Washington Creek, on the opposite (left) bank some twenty miles below, is chiefly notable as the scene of

useless expenditure in coal-mining by eastern capitalists about 1900. A track was laid across the flats back to the coal-measures, and the visitor who scans the bank narrowly as the steamboat swings around the bend will see what the elements have left of a locomotive, or traction engine standing near the bank. There was a road-house there in my time, kept by a lady who is said to have had the interesting habit of taking shots with a rifle at people who went along the river trail in winter and would not stop at her road-house, but I cannot speak of this from personal experience, though I well remember the intimidating and cajoling placards she posted on the trail, a rival road-house nine miles below being the exciting cause. The gradual decay of winter travel on the Yukon has put an end to such amenities of competition, and Washington Creek is quite deserted.

Eight miles below, Charley Creek comes in on the right bank, and I am sorry this stream has lost its native name of Kandik, because there is a Charley River a few miles below, on the opposite side, with which it becomes confused.

Just above Charley Creek was a native village named from the same "Chief Charley" who was sponsor for the stream. It was there in Schwatka's time, though he puts it on the western instead of the eastern bank, and it stood until the phenomenally high water of the "break-up" of 1914 washed it completely away, whereupon the handful of natives removed to Circle. Just below the mouth of Charley Creek, where the river takes a sharp bend to the right and then to the left, is the rival road-

house referred to. This part of the river is much subject to flood, owing to the configuration of the channel, which lends itself to the jamming of the ice, and this particular road-house keeper is not infrequently camped upon the roof of his road-house during "break-up" time. A mile or two below the road-house the steamboat passes close beside the narrow opening of Cañon Creek, a mere slit in the mountains which has such a mysterious look from the river that I have long wanted to explore it, but have never had opportunity of leisure.

The Charley River, which enters on the left bank some ten miles below, though it approaches its confluence by meanders through flat land so inconspicuously as to be easily missed, is one of the most picturesque streams tributary to the Yukon. It is navigable for some considerable distance by poling-boats and has several creeks on which a little desultory mining is done. Its walls are sheer lofty mountains of much rugged irregularity of form, frequented by wild sheep; and, bend by bend, coming down seventy-five or eighty miles of it on a cross-country journey from the Tanana a few years ago, I was struck with its ever-varying beauty and romantic charm. I am not willing to say it is the most picturesque river in Alaska, because I do not know all the rivers of Alaska; but I know a good many and I know none that surpasses it. The whole region between the Yukon and the Tanana is in the path of the migration of the caribou, and its greater elevations all harbour mountain-sheep. On the journey just referred to we found the entire bed of the Charley River, from bank

to bank, and even up to the first mountain benches on either side whenever they were accessible, for fifty miles, trodden hard and solid by innumerable hoofs of caribou, while every here and there lay a dead one, killed by a band of wolves, full-fed and wanton, that was evidently following the herd and pulling down the stragglers. In some cases no attempts had been made to eat the animals, their throats had been cut and the carcasses left, and we chopped off frozen hind quarters and cooked them for our dogs. I am of opinion that every year the wolves kill more caribou in Alaska than all the hunters put together.

At any point along the Yukon it is not uncommon to see bears prowling along the bank, or picking a way amongst the driftwood of the beach. Sometimes a she bear with a cub or two will be overtaken and it is interesting to observe that the bear usually takes no notice whatever of the steamboat, appearing not even to see it unless the captain attracts her attention by blowing the whistle. I have watched such a family group through the field-glasses, amused by the pranks of the cubs and the smart cuffs by which their conduct was regulated from time to time.

The sight of moose swimming the river is even more common, and from my own experience I should judge that the region we are now passing through is more used by them for water passage than any other. Indeed I am convinced that the big game of the region between Eagle and Circle has greatly increased of late years, perhaps owing to the decay of population, and

with it has come a great increase in the number of bears and wolves.

Woodchopper Creek, on which there is profitable mining, Webber Creek, and several others on which gold has been found, though not in paying quantities, are passed on the left bank, and in this region are some fine mountainous reaches.

We approach, however, an end of all mountains for the first time since our journey began. Let us first notice for a moment a curious important creek, much more entitled to the name river than many that bear it, that began to run parallel with the Yukon a little distance off, ever since Charley River was passed, and will continue its parallel course for another hundred miles, with meanderings that will double that distance, until it discharges itself forty miles below Fort Yukon. It is called Birch Creek.

Now there was a Church of England clergyman at Fort Yukon in the early sixties, when the Hudson Bay post flourished and fur was king, who in his journeys across country ministering to his scattered Indian flock, found gold on one of the tributaries of Birch Creek. The Reverend Robert McDonald, afterwards Archdeacon of the Yukon—and his name is still held in the highest veneration by the natives—told of his discovery, and letters exist to-day in which it was written about, but no one at Fort Yukon cared about gold-seeking much more than Archdeacon McDonald did himself. The Hudson's Bay Company left and the post at Fort Yukon changed hands and decayed, and McDonald returned

to the Mackenzie, but the story lingered and passed from mouth to mouth, and "Preacher Creek" on the map, which is certainly *not* the tributary of Birch Creek on which McDonald scooped up gold with a spoon, stands as evidence of it. In all probability, as I am told by those familiar with that whole region, it was the creek now called Mastodon on which the discovery was made.

Arthur Harper (the first man who ever came to the Yukon country seeking gold*) reached Fort Yukon from the Mackenzie by way of the Porcupine in 1873 and heard the story; although he was not then able to follow it up, it stayed in his mind, and while he was running the store with McQuesten at the Fortymile came the opportunity to investigate the region it concerned. So he grub-staked two Russian half-breeds, Sarosky and Pitka (Dall had brought up Pitka from Nulato to cook for him in 1867—I mention this not because I suppose it will interest the reader but because I am gratified at being able to identify him, for I know the man), and these two men found gold on Mastodon in 1893, and from that strike arose the Circle City camp.

I hope this has not been tedious but I could not make it clear in fewer words, and the connection is exceedingly interesting to my mind.

We approach Circle City: the mountains have already receded on the left bank and will presently cease abruptly on the right, and we shall swing out clear of

* Ogilvie.

all elevations of the earth into the Yukon Flats. At the very beginning of them, Circle City raises its graceful wireless-telegraph tower and spreads its line of buildings along the water-front.

The town was built in 1894, on the nearest river-point to the diggings, for Birch Creek is only six or seven miles from the Yukon here, and there were some seventy-five men building cabins that summer. It received its name because it was thought to be on the arctic circle, from which it is in reality distant some eighty miles by the river and about fifty in a straight line. Creek after creek was found that bore gold and at the end of the next season good pay had been found on nine, so that there was a rush to Circle from the interior camps and from the outside as well, and the town grew until it boasted itself the largest log-cabin town in the world and claimed a population of thirty hundred.*

There must have been some active and intelligent men in that camp. A Miners' Association was formed with constitution and by-laws, and a gorgeous painted silken banner and a circulating library of several thousand volumes procured, many of which still remain at the place, though most have been scattered since the association lapsed. I was struck when I first examined the library (it was then almost intact) by the wise and comprehensive choice that had been exercised. Some one familiar with many fields of literature had a hand in selecting those books.

In 1896 when Bishop Rowe came over the Chilkoot

* Ogilvie.

Pass with a pack on his back to undertake the supervision of the missionary work of the Episcopal Church in Alaska, and visited Circle, the place was at the height of its prosperity and a church and a hospital were started.

But the florescence of Circle was short-lived. The first news of the Klondike strike did not cause much stir, but when reports of the wealth beyond the dreams of avarice that had been discovered came one upon the other, and then sober confirmations of the most fabulous of them, there was a stampede up the river that left most of those multitudinous cabins empty. They were never reoccupied. The extent of the Circle diggings had already been reached and no more discoveries were made in the district. Those who outstayed the Klondike stampede joined the stampede to Fairbanks five or six years later, and to-day Circle shares the fate of all placer-mining towns, which after their brief period of expansion and feverish prosperity, sink into a steady decline from which there is no revival. The last time I was there the gorgeous silken banner stood, covered with dust and mildew, in the corner of a disused mission building, the constitution and by-laws hung cobwebbed in a broken frame on the wall, the books, injured by flood-water, were anybody's that cared to take them away. The empty cabins are gone: in this country of extreme winter cold, and roaring stoves, there is always a useful way to dispose of empty cabins.

Circle City may now have a resident population of twenty-five whites, with perhaps ten times as many

NATIVE CHILDREN AT CIRCLE CITY.

The inner bark of the willow is sweet in spring.

working out on the various creeks, some of them fifty miles away, and drawing their supplies from the town. It has also some sixty or sixty-five Indians, in a village that adjoins, with the usual unfortunate result of such adjunction.

These little, decadent, bi-racial places present very difficult problems to those concerned in the effort to supply their religious needs.

Here are a commissioner, a deputy marshal, a government native school, a native Episcopal church served by a native catechist, and a group of mission buildings not in present use, besides a couple of stores, a roadhouse, and a saloon. Add a few residence cabins and you have Circle City.

CHAPTER III

THE YUKON FLATS

JUST before reaching Circle City the river enters the wide level region known as the Yukon Flats and for nearly two hundred and fifty miles pursues its tortuous course therein. This curious valley has its greatest stretch in a N. E. and S. W. direction from the lower ramparts of the Yukon to the lower ramparts of the Porcupine, a distance in a straight line of about two hundred miles, and its greatest width in a N. W. and S. E. direction from the Chandelar Gap to Circle City, a straight-line distance of about eighty miles. It is roughly triangular in shape, its longest line being its northerly boundary, and it embraces an area of about thirty thousand square miles. The river enters this triangular area at the point of its southern angle, pushes its way N. W. almost to the middle of the triangle (where Fort Yukon is situated) and leaves the area almost at the point of its westerly angle, where the abandoned post of Fort Hamlin is perched on the hillside in nearly the same latitude as Circle City, where it entered.

So much any geography book would furnish; but the abrupt change from the steep bluffs and high mountains which have lined the river ever since its navigation was begun at Whitehorse, to the boundless horizon of the open level country, from the narrow, confined stream of the river flowing betwixt its immovable barriers, to

the multitude of channels and sloughs set with innumerable islands, this sudden change never fails to surprise the visitor on his first voyage. Since entering the country a thousand miles back he has seen nothing but mountains, now he will not see even a hill for two hundred and fifty miles.

So closely does this region resemble the approach to the delta country of many rivers, that it is hard, on a first visit, to get rid of the feeling that beyond the maze of low islands ahead must lie the sea.

It would naturally be supposed that a river thus suddenly poured from narrow confines upon a wide plain and spreading itself out into many channels, would lose its swift current and meander sluggishly. No less an authority than Major-General Greely, in his generally excellent "Handbook of Alaska," states this to be the case; but the reverse is true. So long ago as 1883, Schwatka, floating down the Yukon on the voyage that has been so often referred to, but will not be referred to much more, notices with surprise that the current in the Flats does not slacken, and deduces therefrom the great depth of the river in the ramparts from which it has just escaped.

Some of the swiftest reaches of the whole river are indeed in the Yukon Flats, and, in addition, this region has special difficulties of navigation of its own. The soil being almost entirely frozen muck or sand, the swift water, sweeping along the banks, thaws the ground it comes in immediate contact with and undercuts it so that great masses are continually falling into the stream,

bearing their growing trees with them. Sometimes one hundred and fifty to two hundred feet will be removed at one place in a season. Moreover, the speed of the river scoops out its bed and shifts great bodies of sand and gravel from place to place.

The steamboat channel is thus continually changing, for of the numerous channels there is always one that carries the depth and volume of water, and this one is the steamboat channel. In twenty-four hours the steamboat channel may change, may pile up a new bar, may forsake a bank that it has been cutting and throw its water upon the other side, may abandon one branch of the river altogether and pour itself into another. It is thus necessary to maintain a pilot who goes nowhere else than up and down between Fort Yukon and Circle; coming up in his little launch, sounding as he runs, shipping his craft on board a steamer at Circle and guiding the vessel down through the channel he has just verified. Sometimes he takes a steamboat up, but more commonly takes it down, for it is always on the down-stream trip that the greatest danger is met. A steamboat cautiously picking her way up-stream will not hit a bar very hard, and has the force of the current to help her get off should she strike, but a boat that hits a bar going down-stream is piled upon it and held there by the same force. The present pilot, Julius Stankus, has been engaged in this one occupation for a great many years, and knows the eighty or ninety miles of river under his charge with a minuteness of detail that would certainly be called "meticulous" by any newspaper

man who should write about it nowadays, for to most of those who pass through it, the country from one end of the Flats to the other "all looks alike."

It is in truth a most monotonous, dreary, featureless region; level, winding banks covered with dense spruce-trees all about the same height, stretch away as far as the eye can reach; and these banks, continually undermined and falling, have usually a fringe of overhanging moss and trees drooping at every angle from the perpendicular to the horizontal, the boughs of those that are prone gathering and detaining an evil-looking scum from the turbid, swirling waters. There is something very melancholy about a live, prone tree, and as they switch back and forth in the water they seem to be waving their leafy arms as though to summon aid in their hapless plight. Vast, shapeless sand-bars, piled with bleaching driftwood, sometimes occupy most of the view and show how the river continually deflects and changes its own channel. Usually the sand-bars lie away from the deep water, but sometimes the river is seen returning and eating away a bar it has thrown up, like a dog returning to his vomit.

Even those with an eye for locality find it difficult to identify points in the Yukon Flats after repeated journeys; there is a total absence of salient landmarks, and a persistence, through all the two hundred and fifty miles, of the same general appearance.

The thoughtful traveller, gliding smoothly downstream in perpetual sunshine, and, it may be, in weather uncomfortably warm, should yet be able to entertain

conjecture of the difficulty and danger of winter travel in this region, when the river is frozen and the ice and the banks are covered with snow, when fierce storms rage and obliterate the trail, or the "strong cold" settles down with iron grasp upon the earth, when the sun does but rise to the horizon to disappear again, when here and there open water, so swift that it cannot freeze, sends clouds of steam into the air, or thin ice, with the steamboat channel underneath, sets a trap for the unwary.

It is indeed well for the traveller from temperate climes who passes down this river in the heyday of summer and would gather some just and general impression of the country, to remind himself frequently how brief is the season which he is enjoying; to remind himself that navigation of any sort is possible during little more than four months; that by the middle of October ice is running freely in the river, and by the 1st of November at the latest the river is frozen over, not to open again until the middle of May; to remind himself that by just how much the measure of daylight and sunshine overpasses that to which he is accustomed, by just so much is it lacking at the other extreme of the year; that the scrubby, stunted spruce forest that lines the bank everywhere is the growth probably of a full century, and that here in the Yukon Flats is experienced every winter a greater degree of cold than any that Peary registered on his whole journey to the North Pole.*

* Every winter temperatures lower than −60 F. (and sometimes much lower) are recorded at the meteorological station at Fort Yukon, while the lowest temperature I can find recorded in Peary's "North Pole" is −59. I have myself recorded −72 F. on the northeastern edge of the Yukon Flats.

THE YUKON FLATS.

PLAY ENCAMPMENT OF INDIAN CHILDREN AT FORT YUKON.

The impression which the Yukon Flats made upon the first white man who ever voyaged through them (so far as there is record or reason to believe) is commonly the impression they make upon the traveller to-day. "I must say that as I sat smoking my pipe, my face besmeared with tobacco-juice to keep at bay the mosquitoes still hovering in clouds around me, my first impressions of the Yukon were anything but favourable. I never saw an uglier river, everywhere low banks, apparently lately overflowed, with lakes and swamps behind, the trees too small for building, the water abominably dirty, and the current furious." So wrote Alexander Hunter Murray,* the Hudson's Bay Company's factor who came across from the Mackenzie River, by way of the Porcupine, in 1847, and built the trading-post at Fort Yukon.

Yet the Yukon Flats are not without attractive phases. The low, level horizon leaves an immense expanse of sky, and almost the summer through this sky is filled with great masses of bold cumulus clouds, of a lustrous whiteness, that pass along in a stately panorama. It does not require a very vivid imagination to see romantic Alpine landscapes, with peaks and glaciers and vast, dark, cavernous recesses; to see celestial cities with domes and walls of pearl, and palaces of marble; to see colossal similitudes of prancing steeds tossing their flowing manes, issuing forth to "fulmine o'er the field"; and "fulmine" indeed they are very likely to, for at

* "Journal of the Yukon," 1847–8; publication of the Canadian Archives, No. 4, Ottawa.

any moment there may be a brief, violent thunderstorm with drenching rain. Where there is little to look upon below, the eye naturally turns above, and it is rarely in summer that the skies in the Flats have not some glistening pageant to display against the background of a deep-blue sky. The clouds are the chief feature of the summer landscape in the Yukon Flats, and sometimes they give it a dignity and a beauty that will long be remembered.

Fort Yukon is situated at the most northerly point reached by the Yukon River, in the very midst of the Flats, and just before the river leaves its general northwest course to pursue a general southwest course to its mouth. To the ordinary tourists it is rather a squalid-looking little place of many native cabins, a church, a hospital and two or three stores where the best furs and the best beadwork on the river may be bought. It is chiefly notable to them for the multitude of native dogs that flock hungrily to the bank and take up their position exactly opposite the galley as soon as the boat ties up, and there fight and scramble for the scraps that are thrown out by the cooks. The dogs are half-starved in the early summer and their owners themselves are none too well fed, for the salmon have not yet commenced to run and the winter stores are pretty generally exhausted. Ducks form the staple Indian food at this season, and dogs will not eat duck unless they are very hard pressed for food indeed.

If the place have other interest for the ordinary tourist it is because of its geographical position. Lying

A GATHERING THUNDER-STORM ON THE YUKON.

about a mile north of the arctic circle, a visit during the end of June will permit those who are favoured with clear weather to see the sun at midnight. Annually, for the last few years, special boat-loads of tourists have come down the Yukon as far as this point with no other purpose than to see this sight; they are locally known as "sunners." Almost anywhere in the Yukon Flats the sight may be seen, for although by bald astronomical theory it is confined to regions within the arctic circle, yet the refraction of the atmosphere, which raises the sun's disk in appearance a degree or so above its real position, extends it to the regions immediately adjacent also, where there is sufficiently low horizon. Part of the sun's disk may even be seen at midnight on mid-summer day at Circle City, which is below the 66th parallel, by standing upon the top of a two-story house. Beyond Circle City the mountains interfere. Strange as perpetual daylight and sunshine are to those from lower latitudes, they soon become matter of course to the dwellers in Alaska, and it is hard to escape a certain demoralising influence which the suspension of the distinction between day and night seems to exert. When all the hours are bright, there is no particular reason for going to bed at one of them rather than at another; when work may be carried on in all of them indifferently, there is no necessary time for beginning or ending. And since the mosquitoes are not quite so bad when the sun is low upon the horizon as when he has climbed higher in the sky, the midsummer usage of the Indians, which tends to become the usage of the scattered whites also,

is to sleep during the hours that would be the daylight hours elsewhere and be up and about during the hours that elsewhere would be the hour of darkness. Like the Snark, they "frequently breakfast at afternoon tea, And dine on the following day."

But to the traveller who is conversant with the history of the country, Fort Yukon has other interest than its dogs and its daylight; it is the site of the oldest English-speaking settlement on the river, and thus has a certain Jamestown sentiment about it. True, the Russians made a settlement five hundred miles down-stream at Nulato some ten years earlier, which is like the Spanish settlement at St. Augustine in Florida, and they, like the Spaniards, are long since gone. So Fort Yukon is in some sort the Jamestown of the Yukon. A mile away from the village—and a pleasant walk if the mosquitoes be not too bad—is the old Hudson's Bay burying-ground, where graves still bear headboards with dates in the 50's and 60's; certainly amongst the first white men's graves in the interior of Alaska.

The post at Fort Yukon was the farthest-flung of all the Great Company's agencies, and it was known at the time it was built that it was beyond the confines of British America, intruding into Russian territory. One of the best-built and most complete of all the company's posts, "its commodious dwellings for officers and men had smooth floors, open fireplaces, glazed windows, and plastered walls; its gun-room, fur-press, ice and meat wells were the delight and astonishment of visitors." *

* Beckles Wilson, "The Great Company" (Dodd, Mead and Co., New York, 1906), p. 502.

It is certainly interesting to recall that when Murray built Fort Yukon he did not know, nor did any one else know, that the Yukon River was identical with the river at the mouth of which the Russians were seated. Murray thought the Yukon turned northward and discharged into the Arctic Ocean, and he conjectured that the Colville River, the mouth of which the Hudson's Bay Company's explorers, Dease and Simpson, reached and described in 1837, was in fact the mouth of the Yukon, finding support for his conjecture in the confused accounts, brought to him by Indians at second hand, of the great northern tributary of the Yukon, the Koyukuk, some of the headwater streams of which do actually interlock with tributaries of the Colville. It must be remembered that the Russians at St. Michael and Nulato did not know the name "Yukon" at all, but used the Eskimo name for the river, the Kwikpak, and Murray thought that the Russians reached their depots on the lower river, not by the mouth, but by a tributary stream even as he had reached the Yukon.

As late as 1865, when the first exploring party of the Western Union Telegraph Company reached St. Michael, Robert Kennicott, its scientific director, and his colleagues used to have great discussions as to whether the Yukon and the Kwikpak were one and the same river, or the Yukon and the Colville one and the same.

Within a few years of the establishing of this post, however, the venturing of trading-parties from Fort Yukon down the river as far as what is now Tanana, where they met trading-parties coming up from the

Russian post at Nulato, made known to those most interested, though not to the world at large, the course and extent of the Yukon River. The printed narratives give credit to a half-breed Russian, Ivan Simonson Lukeen, sent by the Russians from St. Michael to investigate the intrusion of the Hudson's Bay Company, for the first journey up the river thus far. This was in 1863.

When the United States bought Alaska from Russia, in 1867, it became necessary to determine whether or not Fort Yukon were within the purchased territory, and, early in the summer of 1869, Captain Raymond of the engineer corps of the U. S. army was despatched from San Francisco for that purpose, and travelled up the Yukon from St. Michael in a steamboat belonging to some San Francisco traders who were patriotically resolved to supplant the Hudson's Bay Company should they prove to be intruders. Tourists to-day can scarcely fail to be interested in knowing that this steamboat, the *Yukon*, was the first ever to disturb the waters of the great river. There are yet old Indians who remember the consternation it caused amongst the native population.

Finding by his astronomical observations that Fort Yukon was well within the newly acquired territory, Captain Raymond raised the American flag and served notice upon the officers of the Hudson's Bay Company that they must immediately retire. The company's representatives thereupon abandoned the post and withdrew up the Porcupine River, but so difficult is the de-

termination of position in the wilderness without astronomical instruments that the post was removed three different times before the border was reached, and on the recent exact running of the boundary-line by a joint American and Canadian commission it was discovered that the New Rampart House, the third and last of their establishments on the Porcupine, was no more than a couple of hundred yards or so within British territory.

The story is eloquent chiefly of the little value attached to all this northern country in the early decades of the last century. The Russians certainly had no sort of claim to the interior of Alaska based upon occupation or even discovery; but it was not thought worth making any to-do about; and having regard only to the settlements along the coast, Mr. Stratford Canning for the English crown and Count Nesselrode for the Russian crown ruled a line across the blank space of the map, and England took to the east thereof and Russia to the west. Count Nesselrode is remembered by most people, if he be remembered at all, in connection with a rich frozen pudding, just as the great Hungarian patriot and harrier of the Turks, Hunyadi Janos, is remembered in connection with an aperient water, but Nesselrode was a very important man in his day, and his day was a long one. To the historical student there is much interest in the tie that connects the diplomatist of the peace of Tilsit, the colleague of Talleyrand and Metternich, the reactionary manager of Russia's foreign affairs for the forty years from Waterloo to Sebastopol, with the future Alaska. If Nesselrode's ruler had slipped

a little, the Northwest Mounted Police might have had a post at Fort Yukon in the days of the Klondike rush, which is the next important period in the history of the place.

For when the Great Company withdrew, the place declined in importance; other traders came, but they did not understand native traffic and were not able to hold the people together. Much of the fur catch went up to the Rampart House, and while the point never ceased to be occupied by natives and never failed of a certain amount of trade, it lacked the systematic working of the company and its corps of experienced servants. Maps of the last decades of the nineteenth century (and even some of to-day that ought to be ashamed of themselves) mark Fort Yukon in its place at the junction of the Yukon and the Porcupine, and write the word "abandoned" after it.

It is curious to consider what it is that determines the inclusion of a place in a map. I have often seen maps of the world that included Fort Yukon, and virtually every map ever made of the North American continent marks the place even though it omit populous cities in the United States and Canada. I have an excellent map of the continent before me as I write that includes Fort Yukon, but does not include Fort Worth in Texas or Fort Leavenworth in Kansas—for instance. The reason in this case is partly the wide expanse of country with no other name that can possibly be inserted, and the traditional dislike of cartographers to blank spaces, and partly the geographical position of the place.

right on the arctic circle and at the confluence of the Yukon with one of its chief tributaries. But that legend "abandoned" written after the name Fort Yukon always amused me; it is like writing a word and striking it out again, and yet inserting the word and the erasure both in the fair copy.

The great stampede to the Klondike of 1897 and 1898 brought nothing but harm to the native people of Alaska, and to those of Fort Yukon in particular. The navigation season of 1897 came to a close with many steamboats far short of their destination. Boats of a draught too great for the shallow waters of the Flats, tied up for the winter at this place, and Captain Ray, of the U. S. army, who was sent with Lieutenant Richardson to investigate conditions, reports three hundred and fifty white men wintering at Fort Yukon and is not at all complimentary in his references to the character of many of them. At one time he had to seize merchandise left here en route to Dawson, in the name of the United States, to prevent the looting of it. These were the days when there was no government at all in Alaska. Although the country had been for thirty years in the possession of the United States, our inelastic system had not permitted the setting up of any attempt at governing the Territory.

No extraordinary insight is necessary to realise the situation during that winter and the next. Given a large number of white men with little or nothing to do, quantities of whisky (and there were quantities, though at that time its importation into Alaska was nominally

forbidden) and a timid and docile native people, it is not surprising that there was gross debauchery and general demoralisation. It took Fort Yukon a long time to recover from the evil living of those winters and the evil name that followed.

But it has recovered; and the place has much present interest to those who are concerned with the condition of the native people of Alaska. Missionary work has been carried on here from a period a few years after the original Hudson Bay settlement. When Captain Raymond came, in 1869, he found a clergyman of the Church of England in residence, the Reverend Mr. Bompas, afterwards Bishop Bompas of the Yukon Territory. Those who still enjoy the *Pickwick Papers* will like to learn that the father of Bishop Bompas was the distinguished English lawyer, Sergeant Bompas, from whom Dickens drew the character of Sergeant Buzfuz, who "with a fat body and a red face" represented the plaintiff in the famous case of Bardell *v.* Pickwick.

But the name that will never be forgotten at Fort Yukon is that of Archdeacon McDonald, who translated the whole Bible, the Book of Common Prayer, the Hymnal, and other devotional literature into the Indian language of this place, translations which are still in constant use. For the last eight or nine years a missionary physician has been maintained here, and in 1915 a commodious and well-equipped native hospital was built (after long, vain efforts to induce the government to pay some attention to the health of the Yukon natives) by the efforts of Bishop Rowe and his clergy.

It is exceedingly gratifying to be able to state that these persistent and intensive labours for the upbuilding of the native people have not been without result. Fort Yukon is not only the largest native village on the Yukon River, but it is also the healthiest. While at most other villages the death-rate exceeds the birth-rate, at this place the balance is greatly the other way. The steadily diminishing death-rate in the following table is evidence that the Yukon Indian, as a race, still has vitality.

	DEATHS	BIRTHS
1912	14	20
1913	11	18
1914	8	20
1915	7	20
1916	4	27

While the figures of the last-mentioned year are much too good to be maintained, its extraordinary preponderance of births will help to raise the average.

The observant traveller thus far down the Yukon River must have been struck with the exceeding sparseness of inhabitants, and will understand that the land in general is still an arctic wilderness, with no immediate prospect of becoming anything else. There is no reason why the interior of Alaska should not support two or three times its present native population; it is as good an Indian country as ever it was and does not, of late years, certainly, even tend to become otherwise. In the last decade the white population of the interior has sensibly dwindled, as one placer-mining camp after

another has decayed, and this is particularly the case in the upper half of the river. The big game of Alaska is not seriously invaded, if it be not actually increasing as I believe to be the case: the salmon still swarm up the streams, the fur-bearing animals are still to be had for the trapping; yet on the whole the natives diminish. It will be understood, therefore, how very encouraging the results that have been attained at Fort Yukon are to those who have the survival of the native population at heart.

One drawback the place has, as a place for the erection of permanent expensive buildings such as this hospital: it is subject to constant, and, at times, rapid and violent, erosion of the bank. In the summer of 1916 the river-channel changed in the capricious way it uses in the Flats and threw the whole force of the rapid stream against the bank on which the town is built. More than a hundred feet was cut away during that summer, and the stores, the warehouses, the road-house, the mission house, and many cabins had to be torn down and rebuilt farther back.

It should be understood that, speaking broadly again, the whole soil of the interior of Alaska is frozen solidly from the top to bed-rock, however deep that bed-rock may be, save for the three feet or so that thaws beneath the moss that covers the surface during the summer. This solidly frozen soil of Alaska (and the same is true of northern Siberia) is a puzzle to the geologists. How came these enormous bodies of gravel and sand and muck, deposited by water in the course of ages, some-

A LITTLE MOTHER.

times three or four hundred feet deep, so solidly frozen? If the layer brought down by the floods of the summer froze during the following winter, why did it not—free of moss covering as it must have been—thaw out in the next summer ere is received another deposit? The streams have no power until long after the snow is gone, and the flowers are blooming before the ice goes out. Even the superimposition of a glacial ice-sheet will hardly account for such deep-seated gelation, and it is found in areas that give no sign of glacial activity.

Whatever the cause, the reader must think of the Yukon Flats in particular as solidly frozen ground through which the river has cut a way by thawing, and in which it is still continually cutting by thawing. The most casual observer must have noticed the black, glistening, dripping banks, in some places undermined into cavernous recesses here and there along the river's course. The level at which the rapid water impinges upon the frozen soil, is the line where the great cutting is going on, although all exposed bank is, of course, thawing in the sun's rays and the warm atmosphere, and when this circular saw cutting at the water's level has gone far enough, the whole mass topples into the river, with its trees and its moss. Nothing seems to stop it; the frozen gravel or sand has no cohesion save that which the frost gives; when it thaws, it becomes loose gravel or sand again, and is quickly swallowed up by the river and transported by its swift channel to the nearest point at which it happens to be depositing a bar or sand-bank.

The frozen soil makes any sort of revetment work exceedingly difficult, for piles cannot be driven without first thawing each hole by steam the full depth to which the pile must go down. And the massive character of the ice that the river carries out in the spring and the high water that always accompanies it, would probably tear away any such work that was attempted.*

Besides being the most considerable village of natives on the Yukon River, Fort Yukon is a metropolis and trading point for many outlying settlements. The Porcupine, the Chandalar, the Big and Little Black Rivers, Birch Creek, the Christian River, are all confluent with one another or with the Yukon in this neighbourhood, and all have a certain Indian population, which resorts to Fort Yukon on the great festivals of Christmas and the Fourth of July, and brings its furs to the stores to exchange for "outside" grub, ammunition, and the white man's wares generally, on which it tends to grow more and more dependent. A number of white men, the greater part married to native women, also engage in trapping upon these rivers and their widespread tributaries, and use (and sometimes abuse) the town on their occasions of conviviality and business. Thus it has come about, to close the account of the

* We are, however, undertaking bank-saving work at Fort Yukon of another kind with some confidence in its success; building out at intervals into the river triangular piers of logs by means of which we hope to deflect the current away from the bank. Such device has proved effective on other rivers, and by seeking to control only the lower stages of water (at which the rapid cutting always takes place) we hope we can so construct the piers that the flood-water carrying out the ice will pass over them, without injuring them.

place, that Fort Yukon is the most important fur mart *in* Alaska.

Upon leaving Fort Yukon the river takes the southwest as its general course, instead of the northwest, which direction it has hitherto steadily maintained. For another one hundred and seventy-five miles or thereabouts it flows through the Flats with many channels and amidst many islands, though there are not so many of either as between Circle and Fort Yukon. The same general characteristics are maintained, the same monotony is displayed.

About five miles below Fort Yukon the river receives one of its important tributaries, the Porcupine, from the northeast, which brings from its tributary the Old Crow perhaps the most northerly water that reaches the Yukon; and twenty miles or so below this confluence, the Chandalar is received from the northwest. Like all the tributaries received in the Flats, these streams discharge into sloughs and not into the main channel of the river, and their mouths will be unnoticed unless they be specially pointed out. The Porcupine and the Chandalar will receive special attention later, and need no more than mention here.

Some eighty miles below Fort Yukon on the right or north bank of the river, an abortive attempt at a town is reached, named Beaver, or Beaver City. This place owes its existence to the gold discoveries on the Chandalar River, and particularly to some quartz prospects in which a New York congressman was interested; its decay followed the abandonment of those prospects (temporarily,

at any rate) after a good deal of money had been expended upon them, and the Alaskan Road Commission had been induced to grade a road to them. It still maintains a little store, and a few men prospecting on the Chandalar and its tributaries procure their supplies here. A forlorn, aged Eskimo couple, related to the wife of the storekeeper, are sometimes all the rest of the population. During the summer one or two dog ranches are maintained along the bank by white men and the animals are boarded at so much a head and fed upon salmon.

The visitor will see a number of such dog ranches as he travels the Yukon. Hard by is a fish-wheel, slowly turning in the current and groaning as it turns, its network arms, or "buckets" as they are called, seining the little patch of water into which they dip for the salmon laboriously pursuing their way up-stream. A tent stands on the bank, or maybe a cabin; long racks are covered with dull red salmon; at the water's edge is a rough blood-stained table where the fish are cleaned; a skiff is moored near by or drawn up on the shingle, and all along the earth of the bank, sometimes to the number of several hundred, the dogs are tethered, each one bound to a stake from which, it may be, he will never be released until his master comes for him in the fall. In many cases a dog has dug himself a hole in which he may partially escape the persecutions of the mosquitoes and flies.

The lot of the Alaskan work dog is, in general, a hard one. When the snow is gone and his winter's labours are over, he might, one would think, look forward to a

period of rest and comfort until the return of winter renders sled travel possible again. His summer should be a time of "sweet-doing-nothing" as the Italians say, that should repay him for the aching shoulders and sore feet and whip-lashed flanks of the winter trail. But, indeed, the ordinary Alaskan dog, had he power of prospection, would look forward to the winter during his summer purgatory. Chained to a stake, month after month, all through the summer heats with their venomous insect pests, the length of his chain the measure of his movements, his heavy coat a source of continual discomfort, the natural eager, active disposition of the animal is curbed and goaded into a sullen ferocity by this unmitigated restraint, this ceaseless irritation.

If the needle of the mosquito cannot penetrate the dense coat of the dog, it finds a vulnerable point around the eyes, and it is no uncommon thing to see a dog's eyes so swollen from their stings as to be almost closed, and raw and bleeding from constant rubbing with his paws.

The greater part of the dogs that are "boarded" at fish camps in the summer are the mail dogs, the dogs who carry the U. S. mail up and down the river and across country. They are probably the hardest worked, and, on the whole, the hardest treated of all our dogs. Where one driver will be thoughtful of them and kind to them, another will be careless and brutal, and the driver, in either case, must exact from them the required task.

An ordinary sane traveller will not venture out if

the thermometer be below −50° F.; but whatever the temperature, the mail must go; and whatever the conditions, the full day's journey must be made. Early in the season and late in the season—before and after all other travel—the mail must move. It is all very fine and efficient and bureaucratically inexorable—but it is very hard on the dogs, and on the drivers too, and there is no commensurate gain to any one. In the summer the contractor sends them off to a fish camp where they remain until he requires them again.

But even the dog owner who is most considerate of his animals finds himself embarrassed by them in summer. To keep six or seven big dogs round a house all the summer is a nuisance; they must be chained or they will fight and maim one another; and however much a man may love his dogs, if he has spent the winter in their company he is glad to be rid of them awhile. "Absence makes the heart grow fonder" of dogs whose chief recreation is howling. Moreover, dogs are a great expense, and the only cheap way of feeding them in the summer is with the refuse of the fresh fish as they are caught for drying, and this can only be done at a fish camp. So the private owner of a dog team, also, is very likely to board them out for the summer, however reluctantly.

The native fishing camps are picturesque and not infrequent sights along the river. Virtually the whole Indian population scatters out at this occupation so soon as the salmon begin to run early in July, to the great benefit of the general health. Individuals, apparently in the last stages of consumption, pick up won-

derfully in the fresh air and sunshine of camp life, and children seem to get the greater part of their year's growth in the two or three months of the fishing season; the native dogs become fat and better favoured, and the staple food for man and beast is put up in quantities sufficient for the winter. Occasionally an Indian in a birch-bark canoe may be seen in midstream, fishing in the old way, scooping up with a dip-net the salmon who betrays his presence beneath by a ripple on the surface, but the fish-wheel has almost entirely superseded the more primitive method.

The fish-wheel on the Yukon dates back no farther than the last twelve years and came as an incident of the stampede to Fairbanks. The waters of the upper Yukon are too clear for the employment of this device; the fish can see, and avoid, the netted arms that dip into the stream, but in the middle Yukon, and particularly the Tanana, are very dirty streams, in which fish-wheels do well. So soon as the settlement at Fairbanks created a large demand for dried fish, wheels were set out in the Tanana, and the Indians, beginning to copy the improvement when they realised its advantages, have adopted it almost everywhere it will serve. The tributaries that are not fed by glaciers, and are therefore clear, however, will not yield their fish to the wheels and in their waters the old methods persist.

Nine or ten miles below Beaver a swift side channel that takes off from the main stream to the right, returns to it again about five miles below at such an angle of re-entrance as to create a whirlpool, which at certain

stages of water is quite violent in its action. Since this "Whirlpool Slough" is practicable for small craft, and saves a considerable distance, rowboats often blunder into the whirlpool at its mouth, to the dismay, and even the actual peril, of their occupants, and the entrance to the slough would be marked with a danger-signal were any attempt made by the government to facilitate and safeguard the navigation of this great river.

A couple of miles or so below the whirlpool we come to "Victor's Place," as it is still called, although Victor died some years ago. Since the story of his death is not without interest, and it has never been put into print, and garbled versions are about, it may be worth while telling it here, though it is a winter story.

In January, 1913, while travelling down the Yukon with a dog team, and lying over Sunday at Beaver, word was brought there by a neighbour that he had found Victor dead in his bed. Every one who knew Victor knew that he had heart-disease, so while the news was a shock it was not a great surprise. Procuring some planks for a coffin and putting them on the sled, we went down the next morning. We found the body as the neighbour had found it, lying frozen on the bunk, with every appearance that death had come in sleep.

The weather was intensely cold; it was 50° below zero all that week, and at such temperature when the fire goes out in a cabin it does not take long to freeze everything freezable. While the neighbour who brought the news was busy making the coffin, and my half-breed attendant started to dig the grave by building a huge

fire over the selected spot (only so may we go down through the flint-like frozen earth), I prepared the body for burial, examining it carefully to be sure that death was due to natural causes.

While thus engaged, there came an old Indian and told my boy a story of an assault upon Victor by an Indian named "Beaver Creek William," and I set his name down here for reasons that will appear. That night I took the old Indian's narrative at the mouth of my half-breed interpreter. It set forth that nine or ten days before Victor's death, this Beaver Creek William, having exhausted a supply of whisky at Stephen's Village brought up from a pestilent liquor shop at Rampart, had come hither, two long days' journey, and had demanded whisky from Victor, and upon being refused had knocked Victor down and dragged him about the floor.

Now three or four years before I had found it my unpleasant duty to prosecute Victor for selling liquor to Indians, and though he was acquitted, as is usually the case, yet I knew and, I think I may say, every one concerned in the case knew, that the man was guilty. It put Victor to some expense and trouble, which is about all the good these prosecutions do, commonly, but they are not to be condemned on that score, since expense and trouble are in the nature of punishment, and it is sometimes possible to stop offences by acquittals as well as by convictions. At any rate, Victor took warning, and I do not think he had been guilty of the offence since, and as he knew that there was nothing personal in my action against him, amicable relation-

ship had long since been restored. But it gave colour to the account of the old Indian, and was not inconsistent with what I knew of the sinister character of Beaver Creek William.

When I had carefully written out the old Indian's account of what he had seen, had read it over to him through the interpreter and had sworn him to it, the body was again carefully examined from head to foot in the presence of my companions, but no marks of violence were found upon it at all, save a slight abrasion of one elbow such as might have been made by striking it accidentally against a tree or a door-post. I drew up another affidavit to that effect and swore them to it.

By our Indian's account, the assault had taken place nine or ten days before the death; it must have been slight since it left no marks; Victor had been going about, cooking and attending to his household affairs until the day before his death; it was known that he had heart-disease. Now it was in my mind that William should be punished, but we all came to the conclusion that the assault could have had nothing to do with the death, and that common assault and not murder was all he could be charged with.

The funeral, in the twilight of the shortest day of the year, at a temperature of 80° or more below the freezing-point, in the dead stillness that always accompanies the "strong cold," was one amongst many such that I shall never forget. Putting my vestments on over my heavy apparel I said the burial office, and hastened back to the warmth of the cabin; while

the others quickly filled in the grave they had so laboriously dug, and set up a headboard I had inscribed.

Before we left the place I gathered up all money and valuables and papers I could find and carried them down five days' journey to the United States commissioner at Rampart, in the same weather all the way; and when I had taken a receipt from him for the money and valuables, *I swore out a warrant against William*, charging him with assault, and turned over to the commissioner the depositions I had drawn up.

Then I resumed my journey far afield, and it was not until next June that I heard the sequel. Beaver Creek William was arrested and taken to Rampart. There he secured by some means the services of a lawyer of sorts, who persuaded the commissioner that by statute no man could be tried for assault unless he were confronted in court with the person assaulted; and the case was dismissed. The commissioner was an old retired physician, a good man and a just, but knowing nothing whatever about law; and the case is a commentary on the whole system of the Alaskan unpaid magistracy that must live upon fees even though the fees be insufficient for a living, so that capable men cannot be found to take the office.

But this was not the end of the affair. Certain residents in the Yukon Flats, hearing wild rumours that Victor had been murdered, addressed the district attorney with a demand for an inquest, and charged me with shielding the Indian murderer. At the opening of navigation, therefore, the district attorney sent the

army surgeon from Fort Gibbon to exhume the body and perform an autopsy. The steamboat that took him stopped at Rampart and picked up a coroner's jury, and the company proceeded to Victor's place. When the autopsy was performed and all the evidence was presented, the surgeon told the jury that Victor had succumbed to an organic disease of the heart, and that the assault, a week or more before, could have had nothing to do with the death; the jury returned a verdict of "Death from natural causes," the body was reinterred and the company departed. And yet the story is on the river to this day, with most circumstantial details, that Victor was murdered and the murderer shielded by the missionary.

Since Beaver Creek William was never punished, I have set his name down in the unenviable notoriety of being the only Indian I have ever myself known to be guilty of an assault upon a white man. They are a gentle and even timid people, not given to brawling among themselves nor to acts of violence of any kind; but there are occasional morose, churlish individuals amongst them, who, under the influence of liquor or the craving appetite for the same—and under that influence alone, so far as my observation goes—may be capable of ruffianly conduct. And I take credit that I did unhesitatingly set the law in motion against the only one I have myself known to be thus guilty.

There are circumstances of mysterious interest in Victor's story that do not enter into the account of his death. A year or so before, a steamboat had been robbed

of a large shipment of gold-dust in this immediate vicinity; the night-watchman had dropped overboard and swum ashore after (as it was conjectured) sinking the boxes of gold with a float attached. He was captured at Victor's place and tried at Fairbanks and convicted, but obstinately held his tongue, nor could be induced by any offers of leniency to disclose what had been done with the gold. Did Victor know anything about it? Some have held that the prospecting he was carrying on by proxy back on the Hodzana was intended to furnish a pretext for the production of the gold-dust by and by. Many people believe that it is buried somewhere near his cabin, and now and again surreptitious digging takes place. So here are the elements of a romance of the far north, presented, with my compliments, to the writers for the ten-cent magazines, whose sensational Alaskan stories, of late, show signs of languishing imagination without any signs of increasing knowledge. In the last one I read, a man travelled fifty miles in a day on snow-shoes, with twenty thousand dollars in gold-dust belted around him, which would weigh in the neighbourhood of an hundred pounds.

Let us drop down the river twelve or fifteen miles more, in the course of which the Yukon receives the Hodzana from the north and Beaver Creek from the south. But the Flats are so devoid of natural interest to the cursory eye of the traveller that its place must be supplied with human interest when possible. And certainly, here at "Purgatory," as he calls it, is a most interesting personality.

When Captain (now Colonel) E. F. Glenn conducted an expedition in 1898 that sought to penetrate from the coast through the Alaska Range to the waters of the interior, he had with him Sergeant William Yanert, of the 8th Cavalry. This man was sent out on a detached party and reached a tributary of the Nenana River that interlocks with tributaries of the Sushitna in the neighbourhood of Broad Pass, which tributary was named the Yanert Fork by Alfred Brooks, head of the Alaskan Geological Survey. He also mapped the Sushitna River, and was evidently, from the terms in which he is mentioned in Captain Glenn's report, a most valuable member of the party. There is a lake on the right bank of Birch Creek named Yanert Lake by Lieutenant Erickson, U. S. A., in honour of explorations by the same man, and again a mountain not far from Fort Hamlin, named Yanert Hole (because it probably has a crater on top), named after the same man by the same man.*

So here is one of the few men living with a river, a lake, and a mountain in Alaska named after him; whom the military and the scientific authorities have alike been pleased to honour. And it were well if all the long list of personal names given to places in Alaska had been as appropriately bestowed.†

When his soldiering was done William Yanert built

* "Geographic Dictionary of Alaska" (Washington, 1906).

† I know of only one man who excels William Yanert in the number of different natural Alaskan features named in his honour, and that one is the late John Henry Turner of the Coast and Geodetic Survey; who has a river on the arctic coast, a glacier near Mt. St. Elias, a lake that falls into the Taku Inlet, a mountain near the Stikine River, and an island of the Shumagin group, all named for him.

himself a cabin in the Yukon Flats and called the place "Purgatory," and here he has resided with his brother Herman for the past fourteen or fifteen years. What particular expiation he is working out I know not, but if he be in torment it is not noticeable to the outward eye. Few men more content with their lot it has been my fortune to meet. He catches enough fur every winter to suffice for the supply of his simple wants outside of the game that falls to his rifle, and has ample time left to gratify his deep interest in the topography of the country and its animal life. His cartographical abilities have not been idle; for his own pleasure he has made a careful map of about ten miles square of the Yukon Flats, the only map of any part of the Flats, so far as I know, that has ever been made; and he has been kind enough to permit me to use it as an illustration for this volume. His ingenuity and manual dexterity are constantly exercised in the production of quaint and grotesque carvings. The exterior of his cabin is adorned with admirable reduced imitations of the totem-poles of the coast Indians. Having no master but his own purposes, he leads as free and independent a life as any man I know. His station is either above or beneath envy—as you please; he is not touched by cupidity or ambition, and the rage and the rascality of the world of men pass him altogether by.

The grim humour of the man was displayed a few years ago in a way that shocked the passengers on steamboats tying up at his place for wood; for that was before the ordinary boats burned oil, and Yanert had a wood-

yard. The Northwest Mounted Police had been expelling undesirable characters from Dawson, and many a man drifted down the river in a small boat, preying upon the "camps" he passed, if he found the owners absent. Yanert's place had been robbed of grub in this manner. It is a most exasperating thing for a lonely dweller on the Yukon to come back from some brief journey and find his cache broken into and the supply laid up for the winter invaded, perhaps late in the season, when it is difficult to procure more, even if the wherewithal were at hand; perhaps to find rifle or shotgun gone, or even the stove looted bodily out of the cabin, as I have known, and the blankets gone from the bed. It is hard to think of more cowardly and contemptible stealing. So Yanert designed a warning against any who should visit his place again with such intent. He shot a whisky-jack (Canada jay is its right name, I think, though it is generally known in Alaska as "camp-robber"), that had been pecking at some bacon, and buried the bird in a full-sized man's grave, rounded into the usual shape, and set up this legend conspicuously on the headboard: "He Robbed my Camp and I Shot Him." I know not into what lurid stories of lawlessness in the far north this incident has been woven.

It is good to think of a lonely dwelling on the bank of the Yukon which is more than the abode of hard labour and mere animal existence; which, on the contrary, harbours intelligent thought and even zealous, disinterested enterprise. With rugged health and a readily procured, though modest, subsistence, with leisure

A Fraction Of The Yu

SCALE

ONE MILE

to follow congenial pursuits, with peace and quietness, there are less desirable, if more comfortable, lots than that which William Yanert has chosen.

The map which is here presented, on a sufficiently large scale to show plainly every minute feature, will repay more than a glance. Just as the particular study of a certain period of history throws bright light upon history as a whole, and frequently explains what had before been persistently obscure, so is topography essential to geography; and this area of about one hundred square miles, displayed with almost domestic detail, will convey more understanding of the nature of the whole country than a comprehensive presentation of it could possibly convey. It covers an interesting section. The Flats draw in, the foothills are now not many miles distant from the river; on the right bank, and again nearly opposite on the left bank, a tributary of some importance is received, and just as these streams meander with an elaborate tortuousness towards their discharge, and fall, not into the main channel but into some connecting slough, so do all the tributaries in this region approach their confluence with the Yukon. The broad, sweeping sinuosity of the great river itself is shown even more strikingly by the broken connections to the east of the map, than by the continuous course laid down in the greater part. But what a maze of lakes and swamps and watercourses the whole valley presents!

And the area delineated is broadly typical of the whole region we have lately been voyaging through. The little lakes and creeks so carefully bounded and

named, must stand for thousands and thousands of unnamed ones all over this wide basin. Leave the steamboat anywhere and force your way through the scrub forest and the dense underbrush, and ere long you will reach the bank of another channel or slough. Cross it and you will come to yet another, or you will find yourself on the shore of a shallow lake. Skirt the lake and you will reach an impassable swamp. Indeed, the general characteristic of the whole region is wetness; nine-tenths of all interior Alaska that is not mountain is lake and stream and niggerhead swamp, thickly interspersed with dense scrub forest and "jungle," as Yanert calls it. Travel across it in the summer is impossible, save along ridges of high ground. Even in the mountains the whole earth reeks with moisture; almost every level spot is a bog or a lake, and the valleys are always niggerhead swamps. But in the winter, when the cold solidifies the wetness and the snow smooths out the inequalities, one may go where one pleases in the open, and lakes and swamps are an aid instead of a hindrance to travel.

The permanently frozen soil which the water cannot penetrate is doubtless the reason for this saturation of surface. The snow which melts in the spring, the rain which falls in the summer, soak into the spongy moss until it has all it can hold, and then form pools in all the little hollows between the clumps of moss—and there is a swamp. One need go no farther to understand the terrible plague of mosquitoes which afflicts the country. Given this universal wetness of surface and a sun

that is in the sky nearly all the time, and conditions are ideal for their multitudinous breeding.

It is odd that so many people should still discover surprise at the presence of mosquitoes in the arctic regions. Wherever there is land that retains moisture and receives warmth, mosquitoes may be found. They have no altitude limit as such. I have myself been troubled with them in the Colorado Rockies at thirteen thousand feet, and Doctor Workman found them at fifteen thousand feet in the Himalayas. They have no latitude limit; Greely, for instance, found them at Fort Conger, in Grinnell Land, well above the 80th parallel. Wherever flowers and grass will grow, mosquitoes will breed, and flowers and grass grow wherever there is land near the sea-level not under permanent glacial ice, up to the extreme limit of the northern hemisphere.

Ten miles or so before leaving the Flats a native settlement is passed on the right bank, but off the steamboat channel. Unless the boat have freight for the place it does not usually put in, and the mail for the two white traders who divide its petty commerce, and for the missionary teacher, the only white woman for nearly a hundred miles in every direction, is delivered into the skiff or launch that puts out when the boat is sighted or the whistle heard.

The place appears on most recent maps as "Steven's Village," but since it is the village of the Indian patriarch Stephen, the corrupted name can only be attributed to that perverse desire to make one letter grow where two grew before which afflicts modern philologists and map-

makers, and seems to have taken the place in their minds of the famous horticultural ideal presented for the consideration of Captain Lemuel Gulliver by the King of Brobdingnag. It is usually the Post-Office Department, oddly enough the most illiterate department of our government, which is responsible for these corrupt curtailments, but since there is no post-office at Stephen's Village, the blame lies elsewhere this time. It is my observation that spelling reformers are the most prolix and verbose of writers; economists of letters, they are the prodigals of words; a saving at the spigot and wasting at the bung-hole characteristic of the passion for contraction and elision. So these map-makers who save a letter here and a prefix there, who lop off all possessive forms and write "Cook Inlet" for "Cook's Inlet," will cover the Koyukuk River with places such as Bergman and Arctic City and Peavey and Jimtown and Union City and Seaforth which have no existence.

The last settlement of natives was at Fort Yukon: the intervening stretch of one hundred and seventy-five miles or so separates one language from another. Here at Stephen's Village the natives speak the language of Tanana and the Middle River; the tongue of Fort Yukon is the tongue of the Upper River. While of the same root, the two tongues differ perhaps as widely as Spanish and Portuguese, and this difference seems to speak of a long period without intercourse, in which the divergence arose. Beyond the certainty that the natives of the interior of Alaska are all of one common stock, there is little that is known, or ever can be known,

of their history prior to the coming of the white man. Their language was not written until the early missionaries extracted its grammar and reduced it to writing, and there are no traditions worthy the name historical amongst them.

On the very edge of the Flats the Yukon receives the Dall River on its right bank, and Stephen's Village used to be situated just at the mouth of the Dall, on the slough into which it discharges, but an inundation some ten years ago destroyed the village and induced the Indians to change its site.

This river is named for Mr. William Healy Dall, the distinguished naturalist of the National Museum at Washington, who was one of the earliest explorers of the interior of Alaska, and whose book "Alaska and Its Resources," published in 1870, and long since out of print, is the most valuable book ever written about the country. When Dall records and discusses his own observations he is a safe guide; when he falls into error it will be found that he is recording what has been told him by others. Dall's book left Alaska known to the extent that his eye had seen it; even his speculations on what he had himself seen are almost always judicious and frequently illuminating. He belongs in the first rank of explorers, and his work will be frequently referred to henceforth.

Most people are quite unaware that shortly after the Civil War the Western Union Telegraph Company entertained the ambitious project of connecting Europe and America by telegraph, via Alaska, Bering Sea,

and Siberia, and sent out well-equipped survey-parties into the field on both the Asiatic and American sides, and maintained them for several years, spending upwards of three million dollars in such preparatory work. The scheme was dropped when the Atlantic cable proved successful, and all that was gained was what Dall and his companions brought back from Alaska and Kennan from Siberia in the way of increased knowledge of the regions they had traversed. Both these septuagenarians are still in harness, full of honours and fame.

CHAPTER IV

THE LOWER RAMPARTS AND TANANA

THE Yukon River leaves the Flats even more abruptly than it entered them. There is no gradual rising of the ground or preparatory reassembling of the waters. To right and to left the levels stretch away unchanged, but immediately in front is a mountain barrier with a narrow gap or notch in the midst of it. Straight for that gap the river drives, gathering its various channels together immediately beforehand, and at a plunge has left behind the great basin with its wide-spread channels, and flows in a narrow bed between the lofty barriers of the Lower Ramparts.

One is impressed with the thought of the depth to which that narrow bed must descend in order to carry the great volume of water that has hitherto been spread out in miles of width. Since entering the Flats one first-class tributary has been received and a number of lesser, though still important ones. Not only the drainage of the Flats themselves, of about thirty thousand square miles, but the discharge from the much larger drainage-basin of these tributaries has been added to the water of the river, now all carried in a channel a few hundred yards wide. Farther along it will contract still more. So far as the writer knows, no serious attempt has ever been made to determine the depth of the Yukon within the Ramparts, but it must certainly be very great.

The change of scenery is as agreeable as it is abrupt. The eye has grown tired of the interminable expanse of water and low-lying land, of dense scrub spruce and willow, almost as thick and serried as the pile of a plush carpet, of desolate sand-bars and ragged, crumbling mud-banks, of prostrate trees in full foliage helplessly swaying in the turbid water. It is a pleasant relief to look upon bold high ground again, upon varicoloured rocks, upon a sky-line broken by aspiring curves, upon a prospect mysteriously bounded and an exit apparently denied every time a bend is turned, by distant, overlapping mountains. Even the most accustomed traveller on the river anticipates the change with pleasure; to the new visitor it comes with delight.

Immediately the Ramparts are entered, the deserted buildings of the old trading-post known as Fort Hamlin are seen on a bench of the left bank. The place served as a warehouse in the days of the great Klondike activities, and for a while there was some mining, or at least prospecting, on the Dall River, which drew supplies hence, but for ten years past it has been altogether abandoned and deserted.

For the most part in one compact body—although here and there a small island may divide its stream—the river winds between steep and rugged mountain ridges that maintain a general level until the Ray River is received from the north. Here they open out and break into more rounded, detached masses, but again close in to a general ridge-like character after the confluence. As some of the sharp bends foreshorten the confining

walls they take to themselves an almost cañon-like appearance and often seem to block all possible passage. There is, however, no true cañon of the Yukon. The Ramparts consist of a series of rocky gorges, in places of a picturesque ruggedness and gloom, with the usual small spruce timber clothing the slopes save where the not infrequent forest-fires have denuded them. In such burned places a covering of fireweed springs up, and when it is in bloom, in July, patches of rich magenta brighten the somewhat sombre colouring of the Ramparts.

Forest-fires have done vast destruction throughout the interior. Dall found large forest-fires burning in 1869, and I suppose there have been few summers since when the waste has not continued. Should the season be a dry one, the traveller is almost certain to encounter them somewhere along the course of the Yukon, and at times the journey down the river is made an almost continuous evidence of their activity, near or remote. Sometimes the whole river reeks with smoke from Whitehorse to Anvik. Immense areas have been burned over; once started, the fires sweep on until they burn themselves out or some opportune rain-storm extinguishes them. There is no attempt at fighting them, nor in the present condition of the country would an attempt be possible. Yet it grieves one to see such wastage of timber and of animal life. Birds, in particular, are none too numerous here, winter or summer, and the destruction of young birds in a forest-fire in the early summer is complete for the area involved.

After the Ray River, named for Captain Ray, U. S. A., who was at Fort Yukon in 1897–8, the river turns on itself and flows east, then due south until the next important tributary, Mike Hess Creek, is received, confluent on the left bank, named for an old prospector of these parts. The official curtailer of names has again been at work, and recent maps call it "Hess Creek," striking out the picturesqueness of the name and making it commonplace—but what is that to a cartographical economist who can save four letters thereby? Fortunately, it is easier to change a name on the map than on the lips of the people. Hess might be anybody, but Mike Hess is one man. Nearly opposite the mouth of Mike Hess is an abandoned coal-mine, another of the many along the Yukon. The coal was of poor quality and the vein "pinched out" as it was followed up, which is the story of them all. A little below the coal-mine the river takes another change of direction and for a few miles flows almost north, and then sweeps around in a great blunt curve, with ever-increasing heights on the right bank and lowlands on the left, for Rampart City. This blunt curve is known locally as "Point-no-Point," for ever ahead is what looks like a promontory; until, when it is reached, it is indistinguishable from the general sweep of the bank, and another promontory looms ahead.

From the coal-mine to Rampart is about twenty-five miles by the river; a cut-off across the lowlands of the left bank halves the distance on the winter trail. A mile above Rampart is an abandoned Indian village

with a graveyard high up on the bluff. Such of the natives as survive have moved to the white town; the girls have married white men and the youthful part of the community is half-breed. Is this to be the fate in general of the Alaskan native? Perhaps in small communities like this, it is; certainly the half-breeds are much in evidence and seem to increase everywhere; but it must be remembered that only a part of the natives of the interior live along the Yukon River, and it is along that stream that contact with the white man has been most intimate. There are as yet many Indian communities where there has been little or no admixture of blood. It is not safe to judge all interior Alaska by what is seen along the Yukon.

Rampart City is pleasantly situated upon a bench of the left bank, with lofty mountains behind and rising ground leading up to still loftier mountains on the opposite shore. Its long rows of empty cabins and abandoned stores give a rather melancholy aspect to the town; an aspect which departed prosperity usually takes. There may be twenty-five or thirty white residents, as against a thousand in the heyday of its mining boom. The visitor who walks up and down its deserted streets now, while the steamboat discharges a little freight and the purser wends his way to the post-office with the mails, may conjure up the busy scene that was presented in the summer of 1898, when many a boat-load of eager seekers after gold thronged these narrow sidewalks, or started out through the mud and the mosquitoes with packs on their backs, for the creeks; when these silent

liquor-shops, with doors and windows boarded up, waiting for a resumption of business that will never come, were alive with men entering and leaving, and the stores were open day and night for the outfitting of prospectors. Rex Beach, whose cabin visitors always inquire after, has drawn a highly coloured picture of it in "The Barrier," the scene of which lies hereabout, so far as it lies anywhere.

Across the river is a totally different scene, with totally different associations. Rampart looks backward to the spacious times of the Great Stampede, to the feverish prosperity of gold-dust and gambling-den, when hopes were high and everything was wide open, and cost was not considered, and money was spent lavishly. The Agricultural Experiment Station, its well-kept and diversified fields clothing the uplands with patches of colour unwonted in Alaska, looks forward. It looks forward to farms and ranches, to meadow and pasture, to waving fields and lowing herds. It looks forward and points the way. I could grow eloquent over the contrast did I share to the full the confident expectations of the agricultural experimenters. They have done very valuable work, beyond question; they have sought the world over for hardy and early varieties of grain that would yield in this adverse climate, and they have proved that in favourable spots and favourable seasons these hardy and early varieties will ripen here; they have cultivated with great success the garden vegetables, and have selected and distributed the seeds most suitable for the soil. They have demonstrated that where profit and loss need

THE TOWN OF RAMPART.

not be considered, agriculture is possible in the interior of Alaska. On the south bank of the river the shovel and the gold-pan, the sluice-box and the wheelbarrow are still the implements of what industry there is; on the north bank the plough and the harrow, the drill and the hoe reign.

The juxtaposition is significant, I think, rather than the contrast. The future of agriculture in the interior of Alaska depends on the future of mining in the interior of Alaska. Take away the government subsidy from the farm, and the amount of crops of any kind raised would be the amount that the miners would purchase. In any farming for profit the market of the mines is essential. In the neighbourhood of mines, and nowhere else, may be found flourishing and profitable truck-farms to-day.

Isolated by geographical situation, and enormously remote from any centre of population, what can arctic and subarctic Alaska ever hope to raise for export from her stubborn frozen soil in competition with other lands? But so long as she produces gold she can be made to produce almost anything else in reason that the gold-miners desire. New-laid eggs and fresh milk and cream and butter they may have; the garden vegetables in profusion, even cucumbers and tomatoes raised under glass, if they will pay the price; and they will always pay it if they have it. Farming and gold-mining stand or fall together.

None the less, the country owes a debt of gratitude to the Federal Government for the setting up and main-

taining of these experiment stations, at which the utmost capacity of its soil and climate is gradually being ascertained.

Thirty miles or so below Rampart the gorges of the river grow towards their maximum of picturesqueness, and about ten miles farther reach an impressive climax of gloomy depth and lofty height between their steep mountain-walls. Here are the rapids; the channel is constricted by rocks and presses against the south bank, and the great volume of water passing through a narrow compass with considerable grade gives a very swift, swirling current, though it presents no great difficulty to the river steamboats unless they have heavy tow of barges. This is the point which the Russian naval lieutenant Zagoskin* is generally credited with reaching on his voyage up the Yukon in 1842, reporting the river not navigable any farther. The traveller who, upon reaching the rapids, has already passed down more than a thousand miles of the river in a comfortable steamboat, may smile at the Russian naval officer as a somewhat perfunctory explorer, and indeed it is certain that long before any steamboat plied these waters the Hudson Bay voyageurs from Fort Yukon came down through the rapids in large flat-bottomed boats loaded with trade goods, and returned with the furs for which these were bartered. Old natives at Tanana still tell with admiration of the bateaux with six pairs of oars which brought

* It should be noted that Dall credits Zagoskin with reaching only as far as the Nowikaket, but it is hard to understand why he should declare the river unnavigable above that point whence all is plain sailing to Tanana.

YUKON RIVER, WITHIN THE LOWER RAMPARTS.

them guns and blankets and powder and shot and tea and tobacco, and gave them better terms than the Russians from Nulato gave. But in all probability Zagoskin was the first white man to voyage thus far upon the Yukon River. Knowing nothing of the geography of the country beyond his own explorations, knowing nothing of the immense depth of the narrow channel he was pursuing, penetrating farther and farther into a maze of mountains which rose ever higher and higher, it was no wonder that when he came to the broken, rushing water of the rapids in the depth of the deepest gorge, with the difficult and dangerous tracking over the boulders of the shore necessary to pass through them, he assumed that he had reached the limit of navigability and turned back.

On the right bank, nearly opposite the swiftest water, is an abandoned station of the military telegraph line, that used to follow the river from Tanana as far as Rampart. Rampart now has its telegraphic connection by way of Hot Springs on the Tanana River, and this lonely station, lonely both in summer and winter, no longer condemns two men of the Signal Corps to exile from mankind. On the other hand, the abandonment of this lonely station makes the Yukon River more lonely—and this process goes steadily on. It is one less place of refuge from the storms that in the winter rage through the Ramparts; one less place where a man may find shelter and fire and food. Having had rest and refreshment there on several well-remembered occasions, encouraged to press on against the snow-laden blast by

the knowledge of its proximity and the anticipation of its hospitality, the writer cannot but regret its abandonment. So violent are the wind-storms that prevail within the Ramparts for the greater part of the winter that the ice is commonly swept entirely free of snow, and sometimes for twenty miles at a stretch its surface is burnished by the constant attrition into a beautiful appearance of translucent black crystal, its cracks visible down through all the six feet or more of its thickness.

Between mountain barriers of the same general character as heretofore, though gradually lessening in height, the Yukon now approaches its most important confluence, the confluence with the Tanana, which enters from the south almost at a right angle; but the Yukon itself turns almost at a right angle to receive its tributary, so that at the point of junction the directions of the two streams coincide, and for three miles they flow side by side, with islands between them, the waters gradually commingling until the town of Tanana is passed.

Just at this right-angle bend, where a lofty mountainous bluff rises from the north bank of the river and the channel flows around its base, the Ramparts end, and the prospect opens out to right and left into the vast valley of the lower Yukon. So soon as the corner is turned and the river is out of the Ramparts, the Protestant Episcopal Mission of Our Saviour appears, picturesquely situated on steeply rising ground, with a large hospital (twin to that at Fort Yukon) on a bench of the hillside, and a capacious and handsome church, adjoining a graveyard with beautiful birch-trees, near the river; the

THE "PELICAN" STOPS AT A FISH-CAMP WITHIN THE RAMPARTS.

native village straggling along the bank for two or three hundred yards. In another couple of miles the town of Tanana is reached and the boat ties up to the wharf of the most important place, in a general way, on the American Yukon. In point of population Ruby exceeds it, but Ruby is the port of a mining-camp merely; it sprang up in a night and will dwindle and die, as Rampart has dwindled and died, when the placers in the hills behind it are exhausted.

It is the peculiarity of Tanana that it is not directly dependent on mining. Its importance is due partly to the army post, Fort Gibbon, which adjoins it, and partly to its situation at the confluence of the Yukon with its chief and most populous tributary. It is a transfer point and a trading point; if the visitor go on down the river, he will probably have to change boats here, for the regular steamers from Dawson turn up the Tanana River to Fairbanks, and he may have to wait several days, or even a week, despite all assurances to the contrary.

The confluence of the Yukon and the Tanana has always been an important point and probably always will be. Before the white man's time it was the great summer gathering-place, and Indians from far up the Tanana River, and even from the upper Kuskokwim, met here with those from the upper and the lower Yukon for barter of furs and commodities.

Just as the mouth of the Kobuk River in Kotzebue Sound has for ages been the summer meeting and trading place of the Eskimos from Point Barrow to Cape Prince

of Wales, and still gathers many hundreds every year, so this place, Nu-cha-la-woy-ya* in the native tongue ("between the rivers"), was the great rendezvous of the Indians of the interior. By trade with the coast Indians of Prince William's Sound and the Lynn Canal, with Eskimos from Bering Sea, who all came into not infrequent contact with ships and sailors well before the close of the eighteenth century, and by trade with the tribes of the Mackenzie who dealt with the Hudson's Bay Company's posts, passing from hand to hand, from tribe to tribe, the white man's axes and files and knives were brought here and distributed over the interior.

Very old men living to-day cannot remember when steel and iron tools were not in use, though they remember them as scarce and precious. Some of them state that their fathers remembered the use of stone axes, but the oldest living natives cannot remember ever seeing a stone axe.

As early as 1778, when Cook visited the natives of Prince William's Sound, he found iron arrow-heads and knives amongst them, and on seeking to discover whence they had them, they pointed to the east, and he rightly conjectured that they had come all across the continent from the factories on Hudson's Bay. Even before that,

* I must ask the reader to bear with this note—or skip it—as it is written more for my own satisfaction than his. There is a singular unanimity amongst the early writers from Dall to Schwatka, in miscalling this place Nuclacayette; Indian after Indian, however, has assured me that there was never such name, and I conclude that these writers did not receive the name from Indian lips but from white men, who handed out to successive visitors their corrupted form. But I can find no trace whatever on the river to-day of the corrupted form.

in 1741, when Bering landed on Shumagin Island and buried a sailor (for whom he named the island), he is said to have found natives wearing iron knives at their girdles. So when Clive ransacked the treasury at Moorshedabad after the battle of Plassey, he found Venetian florins and Byzantine sequins which had been received hundreds of years before in payment for goods that had passed through an immense number of hands in barter ere they reached the consumers in Europe. The wonderful ramifications of indirect trade and its irresistible power of penetrating all barriers would be a fascinating subject for a theme, for which history would furnish many picturesque illustrations.

In the classification of the archæologist the natives of the interior were in that period of development known as the stone age—though it might puzzle Henry Fairfield Osborn himself to say in what precise division thereof—when they began to come in contact with the products of the white man's civilisation, nearly a century before they came into contact with the white man himself. They had domesticated the dog; they used flint-headed arrows and spears; they wove nets and baskets from the fibre of the spruce root; shaped admirable canoes from the bark of the birch, and toboggans and snowshoes from its wood. They clothed themselves with the furs and housed themselves under the hides of animals killed in the chase, and had a rude unglazed pottery. They seem to have made already all that was to be made of their meagre resources and their harsh environment; it is difficult to see how they could have advanced any further

without impulse from another race, and quite impossible even to conjecture how long they had lingered at this stage. In sinking a well at the Allakaket, on the Koyukuk River just at the arctic circle, fragments of pottery and of wooden implements were brought up from twenty-five feet below the surface.

Some resemblance in feature and expression which certain individuals amongst them display to the Japanese often prompts inquiries amongst visitors whether the race be of Mongolian origin. The only answer that can be given is that there is no ground for such belief—or, for that matter, for any other belief as to their origin. Where nothing is known, one man's guess is as good as another's.

They are classed by ethnologists with the Athabascan race, the general race that so many tribes of North America belong to, and the problem of their origin, therefore, merges in the larger problem, which in all probability is quite insoluble. What little evidence there is seems to indicate that they came into Alaska from the East rather than from the West; from the Mackenzie River country rather than from Asia, but the only positive opinion to which I am willing to commit myself, after some examination of the subject, is that they are not descended from the "Lost Ten Tribes of Israel."

There is probably little additional ethnological or archæological data of value concerning these people recoverable. A sufficient examination of their language and legends, their manners and customs, has already been

made by competent hands, Father Jetté, S.J., of Tanana, who has spent many years of precise and patient study of them, being the recognised authority upon them in scientific circles. Their traditions and folk-lore already show traces of the unconscious influence of the white man's teaching, and much that they begin to grow ashamed or contemptuous of is suppressed when they can be persuaded to a narration. The relics of indigenous culture have disappeared; on several occasions I have met learned representatives of museums searching the country for specimens of primitive handicraft and finding none, and in twelve years I have been able to procure one stone axe and have seen two others. One of these two others had the special interest that it was found near the mouth of Beaver Creek on the Yukon, beside some ancient tree stumps that bore every appearance of having been cut with it, and I was sorry that I was unable to visit the place and verify the circumstance for myself. The finder said that at first sight he thought the trees had been gnawed by beavers. As one looks back one grows to a great respect for these people, maintaining a brave and successful contest against the utmost inclemency of nature with such crude weapons and tools. Their descendants at Tanana are decadent; every year the deaths exceed the births and the village dwindles as the graveyard grows.

When the somewhat limited resources of Tanana are exhausted many visitors walk out the two and a half miles from the town to the Mission to relieve the tedium of waiting day after day for a steamboat, and often

grow enthusiastic over the picturesque graveyard full of brightly painted graves nestling amongst beautiful birch-trees. But the writer being deeply concerned in the preservation of Alaska's native population can take little interest in a picturesque graveyard that is gradually swallowing up that population with no progeny left behind to continue the race.

The reader may recall the table of births and deaths at Fort Yukon over a period of five years, and the increase of population which it represents. For the same quinquennium there is a steady decrease at Tanana; indeed, there has not been a year for ten years past when the births have exceeded the deaths—until 1916, when the births have a slight preponderance.

Why is it that at Fort Yukon the Indians are steadily increasing and at Tanana are steadily decreasing? They are offshoots of the same stock, of the same general habits and character and mode of life, have been for years under the same religious influence. So far as location is concerned the Tanana Indians have rather the better of it; the salmon are fatter and more plentiful here than they are three hundred and fifty miles farther up the river, the climate is slightly less severe, there is a little more sun in the winter, access to the haunts of the big game is somewhat easier; berries of all kinds are abundant, while in the neighbourhood of Fort Yukon they are not found at all; and who would not rather live amongst these pleasant hills than in the gloomy wilderness of the Yukon Flats? All things considered, I am of opinion that the natives of this mid-section of the

THE CHURCH AND GRAVEYARD AT THE NATIVE MISSION AT TANANA.

THE GRAVEYARD AT THE MISSION OF TANANA.

river are more favourably situated for the needs of Indian livelihood than those much above them or much below.

The inquirer who will look around him at Tanana may find the answer without much difficulty. There is the army post with its soldiers; there is the town with its saloons. A special agent of the Department of Justice reported a few years ago that no less than forty white men, in and around Tanana, made their living or a part of their living, peddling liquor to the Indians. Liquor and lewdness—and where do not the two go hand in hand?—are destroying these people. The children are born diseased, of drunken and diseased parents, and find an early resting-place in that picturesque graveyard. The chief of the tribe died lately of an alcoholic debauch, and one of the gayest of those graves is his.

One takes encouragement from the recent decisive vote of the people of Alaska in favour of the prohibition of alcoholic liquors and the "bone-dry" law which Congress thereupon enacted, but one's encouragement would be more buoyant were there grounds of past experience for an expectation that the law will be thoroughly enforced. There must be a change in the system of magistracy and a change in the system of police before this will be possible, and there seems little likelihood that the United States Congress, the only authority adequate to that change, can be moved to make it. Territories have always been justiced by commissioners living upon fees, have always been policed by United States marshals and their deputies; and there is no more conservative

body on earth than our Congress when it is not under the influence of panic.

The visitor who has leisure to take the little walk to the Mission should look out, if it be a clear day, from the vantage-ground of the hospital for the fine view that it affords of Alaska's great mountain, Denali, or Mt. McKinley, looming like a white cloud on the southern horizon—one hundred and fifty miles away. Rising well above twenty thousand feet, it is not only the loftiest mountain of the North American continent, but it is the most northerly mountain of the first class in the world. If he be intending the journey to Fairbanks he will have other and somewhat nearer views of it, but if his course lie down the Yukon this will be the only opportunity for seeing it at all; and since weather clear enough to disclose the mountain is rare in the summer-time, he will do well to avail himself of this chance in either case, for it is perhaps the finest sight interior Alaska has to display.

The geographical position which made Tanana an important native place has made it an important white place. It determined the location of Fort Gibbon in 1900, and had already brought storekeepers and traders. But it was the discovery of gold three hundred miles up the Tanana River, and the building of Fairbanks in 1903, and the great development and growth of the next year, that really established the place. It is the most central spot of the interior, and in the day when Alaska is divided into manageable portions, should be the capital of the Yukon. In the winter the trunk trails to

Fairbanks and the southern coast, to the Koyukuk and the northern mines, to all the lower river points and Nome, meet here; in the summer all steamboats up and down the Yukon and up and down the Tanana meet here and transfer passengers and freight.

The army post will not detain visitors long; there is no stateliness of building or careful laying out of ground; climatic conditions are, of course, averse; the two years' sojourn of officers and men is not long enough to arouse the desire of making the place attractive; it is too often thought of by both as an exile to be borne as best it may and to be terminated with joy; by both,—and especially by their wives. There is no military pomp or parade whatever; I have been there on the Fourth of July, when not the slightest notice was taken of the day; I have been there when the governor of Alaska made a visit, and not the slightest notice was taken of the governor of Alaska, although by the regulations of the army itself he is entitled to his salute of guns at any post within his Territory. A flag is raised and lowered and a gun is fired every day; the rest is fatigue duty with a moving-picture show twice a week.

The army post is important to Tanana from a commercial point of view, and it is important, also, from a social point of view. However poor their taste as architects, however little effort be made to represent the majesty of the United States, there is always a certain dignity and urbanity about the officers of the army themselves, and it is no small thing to domicile a dozen men of culture and intelligence with their wives and

families in the midst of interior Alaska. They usually mix freely with the substantial families of the town, and give a tone to Tanana society that no other place in the interior can boast.

This tone at Tanana, and the maintenance of the telegraph lines by the Signal Corps, represent the accomplishment of a military garrison which, as I am informed on good authority, costs the United States at least $350,000 a year to maintain.

One other matter connected with the army post should be mentioned, the kind willingness of the post surgeons to give of their time and trouble in attending to the ills of the natives of the village. There is no medical man at the native hospital at this writing—though one is under appointment—nor has been for some years, and it is always an exceedingly difficult thing to procure suitable men willing to undertake this work. There is no greater need for the world's primitive people to-day than a large increase in the number of men trained in medicine who are willing to devote themselves, without much hope of reward or renown, to medical missionary work. So it has been of immense assistance to those labouring at this Mission that the army surgeons at Fort Gibbon have always been willing to lend their cheerful and capable services.

CHAPTER V

TANANA TO NULATO

We are now more than half-way down the navigable Yukon, and have left narrow confines and rocky gorges behind us for good. The great valley we have entered is sharply bounded for hundreds of miles more on the north by mountains for the most part contiguous and never far distant, but it stretches out to the south in vast forested areas. The Yukon grows markedly broader and more affluent after receiving the Tanana. Much water will, of course, yet discharge into it along the eight or nine hundred miles it must traverse to its mouth, but it has now received the greater part of its flood, and has a strength and copiousness that begin to make manifest its rank amongst the world's great rivers.

It may not be out of place here to refer to an interesting phenomenon touching this river's flow. It is well known that the great rivers of Siberia, the Obi, the Yenesei, and the Lena, which have in the main a due northerly course to the Arctic Ocean, exhibit over that whole course high eastern or right-hand banks and low left-hand banks. Nordenskiöld, in the "Voyage of the Vega"—a most comprehensive gathering of information touching the high latitudes of Asia, as well as a narrative of the making of the northeast passage—draws attention to this circumstance; and Nansen, in the very able ac-

count of his recent Siberian journey on behalf of the Russian Government, refers to it and discusses it at some length. The explanation is obvious; the rotation of the earth on its axis from west to east throws the mobile water against the eastern bank, and in the course of ages the rivers have eaten away their eastern banks and moved over slowly but bodily to the east, until they have encountered some rocky barrier that checks further advance, leaving low, alluvial land behind them to the west; and are still so cutting and moving. Now the Yukon River, so soon as it emerges from the rocky confines of the Ramparts, down virtually to the beginning of the delta at its mouth, displays the same phenomenon: it presses continuously upon its right bank. But the curious and interesting thing about it is that its course is not to the north at all; it has a general south-westerly direction, and for the two hundred odd miles that lie immediately before us, from Tanana to Nulato, its course is almost due west. Occasionally in the neighbourhood of a tributary coming in on the right which deposits a bar, or of some other obstruction, or on the rare occurrence of rocky bluffs on the left limit, as in the region of Melozikaket, the channel swings to the left bank, but over by far the greater part of the distance the channel hugs the mountains of the right bank and leaves the low alluvial ground on its left, just as the Siberian rivers do. What effect can the earth's rotation have upon a river flowing mainly east or west? Only, it would seem, that of hastening or checking its stream. The rule deduced by Nordenskiöld is that

rivers that deviate much from the parallels of latitude will display the effect of the earth's rotation that he describes, but here is a river which, in this long stretch, deviates little from the parallels and yet displays it in a marked degree.

Again, from the Koyukuk mouth to Ikogmute (Russian Mission), a distance of upwards of three hundred miles, the river leaves its westerly and drops into a nearly due southerly course, deviating more widely from the parallels of latitude than it does in any other equal stretch of its own length. But this deviation being southerly should, by the Nordenskiöld rule, throw the waters against the left bank of the river instead of the right; yet here, also, the channel almost continually presses against the right bank. It would be interesting to see this matter fully discussed and the circumstances explained, for it can hardly be mere chance that over many hundreds of miles the Yukon hugs só closely its right or northern limit.

Nine or ten miles below Tanana Tozikaket is passed, where the Yukon receives its tributary, the Tozitna. Since a number of "kakets" or "chakets" will be passed, the reader may be informed that this suffix in the Indian tongue of these parts means "mouth," and is added to the name of the river to signify the mouth of the river in this way: the termination "na," which signifies "river" or "water," is struck off, together with the preceding consonant, if there be one, and "kaket" is suffixed to the root that remains. Thus the mouth of the Tozítna is Tózikáket; the mouth of the Nowítna is

Nówikáket; the mouth of the Melozítna is Melózikáket —and there are scores of others along not only the Yukon but the Tanana and the Koyukuk; throughout, indeed, the whole range of this language. The knowledge that the syllables "kaket" mean mouth, without the knowledge of the simple rule of inflection just given, led the map-makers, some years ago, to write the names of the rivers mentioned above, "Tozi," "Nowi," "Melozi," which are not Indian forms at all; but the proper forms have of late been restored.

The struggles of the early explorers with these names and the extraordinary results they print are sometimes amusing, and illustrate the famous Captain Cook's observation made while he was cruising on the Alaskan coast that he had frequently found "that the same words, written down by two or more persons from the mouth of the same native, differed not a little." Whymper writes Tozikaket "Towshecargot," and with Schwatka Nowikaket becomes "Newicargut." Dall, however, whose ears as well as eyes were by far the best of any of the early Yukon travellers, writes the names almost exactly as they are written now. Dall's "Alaska and Its Resources" was published in 1870; if Schwatka, whose journey was thirteen years later, had taken the trouble to read it, he would have been spared a great many blunders. I have spoken of Dall's book before; let me say here that I never turn to it without being struck afresh with the wealth of accurate observation and judicious reflection it contains.

About sixteen miles below Tanana, on the right bank,

was an old native village and trading-post (to which the corrupted name Nuclacayette was transferred), dating back to the early trading days before the gold stampedes of the closing years of the nineteenth century—now long since abandoned for the town of Tanana. When Lieutenant Schwatka made his raft journey down the Yukon in 1883 this was the most important trading-post on the river. McQuestion, Harper, and Mayo, the first white men other than the Russians and the "Hudson's Bay Company's servants" who came to live on the Yukon, had their headquarters here, managing, at that time, the Alaska Commercial Company's business, a San Francisco corporation which entered upon the Alaskan trade soon after the Purchase, and until two or three years ago still held the valuable sealing monopoly of the Pribilof Islands. Of the three men mentioned Alfred Mayo still survives at Rampart, beyond any question the oldest living Alaskan pioneer. This place, which figures more largely than any other in the early narratives of the river, and thus deserves mention here, has long since quite disappeared.

A few cabins about the mouth of Grant Creek, on which creek was a factitious mining excitement some years ago which involved (and overwhelmed) a commanding officer at Fort Gibbon, are presently passed, and the main stream of the river swings over to some remarkable cliffs of frozen mud on the left bank, known as "the boneyard." As the sun thaws these bluffs all the summer through, and the face sloughs off into sticky, evil-smelling muck, quantities of bones of great extinct mammals

are uncovered. The occurrence of these remains of the mammoth and mastodon throughout the northern parts of America and Asia and Europe, is well known and has often been described and discussed. Indeed, it is said that no other extinct animals have left such abundant traces behind them. Kotzebue first drew attention to these remains in Alaska when he found skulls and bones in the great ice cliffs of Escholtz Bay of his Sound in 1815. They are plentifully distributed throughout the whole interior of Alaska. Almost any sand-bar will yield a tooth. I know an empty cabin on Crooked Creek in the Chandalar-Koyukuk country, where an enormous mammoth tusk reposes, brought up from a shaft—as I was informed—at a depth of nearly two hundred feet, the sole product of an expected gold-mine. I think anybody might take it who would be at the labour of removing it. One's surprise and speculation are, however, aroused at such great accumulations of bones as these mud cliffs contain; what killed the beasts and then gathered their carcasses together, how came they embedded in the muck and then frozen into a solid layer two or three hundred feet thick?—these are questions that one naturally asks, but must be content to leave unanswered. It is well known that in the tundra of Siberia whole carcasses have been found embedded in ice, the flesh so perfectly kept from decay in this cold storage that it was fed to the dogs, and even some of it eaten by men. No such discovery has, I think, ever been made in Alaska, but it is quite likely that the tundra of the arctic slope may hide similar complete remains.

A few miles below the boneyard we come to the Nowikaket on the left bank, the river discharging into a bay or harbour. The affluents of the left bank in this region are not important, or navigable for many miles: they rise in the mountains which form the watershed between the Yukon and the Kuskokwim, which river, the second largest in Alaska, now begins to flow in a course generally parallel with the Yukon, into Bering Sea. On the opposite shore, a little below, is Mouse Point, and I well remember a story told me by the trader at Mouse Point, a man above the ordinary intelligence, on my first visit to the place—a story which illustrates the utter neglect of Alaska by the government of the United States until a few years ago.

This trader had come across the river to the Nowikaket in the spring of 1902 on some occasion of business, and had noticed the remains of an old camp destroyed by fire. Rummaging among the débris, he uncovered the charred body of a man, the skull cleft as by the blow of an axe. With some companions he returned a little later to make a thorough search, and their investigations left little doubt that robbery and murder had been done here the previous summer. Two large gold-pokes of moosehide were found, empty, but with enough dust still clinging to the sides of the sacks to satisfy the experienced prospectors that it was Klondike gold. An old battered clock, as I recollect, also bearing the name of a Dawson dealer, was found, and some other personal relics.

A careful statement of what had been discovered,

substantiated by the signatures of the discoverers, was sent to the nearest United States court—then at Eagle —and to the Department of Justice at Washington, and repeated attempts to secure some judicial investigation were made. But not the slightest notice was taken, and no effort was ever made to identify the victim or discover and secure the criminal. Finally a hole was dug and the body interred—and there it lies yet, unidentified, unavenged. There is little doubt that other such crimes were committed with like impunity.

A few miles below Mouse Point, on the same side of the river, we reach Kokerines, a native village under Roman Catholic charge, with a trading-post, a church, a government school, and a telegraph station. This is the beginning of Roman Catholic native work on the Yukon; from this point they divide the river with the Greek Church, save that at Anvik the Episcopal Church has an old-established and important Mission.

"Kokerines" is named for an old Russian settler who had a numerous half-breed progeny by a succession of native wives. I can find no reference to him in Dall or Whymper or Schwatka, though Lieutenant Allen in 1885 mentions him as agent for the Alaska Commercial Company, and spells his name Cochrein, which, for aught I know, may have been the right way to spell it. Yet he came during the Russian occupation, and when he died, not many years ago, must have been the oldest white settler on the Yukon. Several of his daughters are married to substantial white men.

The "Kokerine Mountains," on the right bank, pile

THE KOKERINE MOUNTAINS.

up into a bold range, ridge above ridge, far above the timber-line. Where the mountains emerge from the timber, as they do here, their moss-covered or rocky summits give pleasing variety to the landscape and make the region one of the most picturesque on the Yukon. The snow lingers on them till late in June, and comes again early in September, with an added dignity and brilliance of contrast. All the way to the Melozikaket the mountains beyond the right bank are massive and imposing, with great rounded shoulders deeply sculptured by gullies and glens. Their highest domes, rising from three to four thousand feet above the river, for much the most part virgin to the foot of man, give the traveller who loves climbing a desire to reach them and gain the splendid wide view which they would afford. On the other side of them the Melozitna is hastening to its junction with the Yukon, twenty or thirty miles below.

It was in this fine region that the writer witnessed the grandest and most memorable thunder-storm of his experience. We were journeying up the Yukon from Anvik to Tanana, late in July, 1909, in the launch *Pelican*, after a week of the most intense sultry heat; and because it was too hot to run the boat by day and navigation was easy, we were running all night. Ponderous masses of cloud had accumulated about the peaks and domes of this range before it grew dark, and almost as soon as the last twilight faded the electrical combat began. The lightning fulminated from peak to peak, now in one blinding flash after another, now tremulously

constant for several seconds at a time, illuminating their dark, cavernous recesses and revealing the whole wide river landscape, and shining so brightly through the windows of our engine-room that the polished parts of the motor gleamed in its light. The thunder crashed and pealed, and the reverberating boom from every shoulder and buttress had not begun to grow faint ere another crash and peal split the air. Now the clouds seemed to have advantage and descended to envelop and grapple with the peaks, as though to split and rend them with thunderbolts at close quarters; now the mountains seemed to prevail and the clouds withdrew awhile to reinforce themselves for another attack. And the strange thing about it was that the atmosphere of the river was wholly undisturbed by the titanic conflict; the storm was confined to the mountain tops and the region of the air they penetrated. All the brief night through, the majestic spectacle was maintained, as hour after hour we pushed on from Melozikaket to Kokerines, and all night long, now at the wheel, and now leaning out of a cabin window, I watched it, entranced. As we passed Kokerines and the dawn appeared the conflict abated, but it was not until the thunder-storm on the mountains was over and the day was come that we ran into violent wind and rain that for a while tossed the launch about like a cockle-shell. The sultry heat was gone for the summer.

Thunder-storms are not very common on the Yukon, though when they occur they are likely to be violent and notable, but there is no country I have lived in that

stretches such vivid rainbows across its skies as does the Yukon country, and I can say with Wordsworth:

"My heart leaps up when I behold
A rainbow in the sky."

It was in this same region that I saw the grandest rainbow I have ever seen. All day the entire heavens had been overcast, with intermittent drizzling rain, and at eventide the heavy pall was suddenly lifted at the northwestern horizon just enough to let the level rays of the sun stream through. Instantly there sprang out against the dense, dripping clouds the most superb and startling display of colour my eyes have ever witnessed. There were two complete, concentric bows, with a definite outline of a third, spanning the river. The inner of the two was brighter, I think, than any rainbow I ever saw out of Alaska, but the outer one was so dazzlingly brilliant that we who saw it were dumb with amazement and awe. Never before had I seen the prismatic colours so distinct from each other, so sharply divided into separate bands; never before such rich and lustrous effulgence. It was as though some new celestial sign had been given the world; and my thoughts reverted to the rainbow of the apocalypse, encircling the Great White Throne, and for the first time in my life it seemed an appropriate and ever adequate figure. Then in an instant it was gone, and the sun had set, and the leaden skies took a deeper sombreness from the recollection of the pomp and splendour they had so recently displayed. I will not say that Claude or Turner could not have

painted this scene, though the palettes of Titian and Paul Veronese were more familiar with the pure, rich tints that would have been required; but I am sure that whoever had painted it would have been called extravagant and sensational by any one strange to our skies.

Yet another delightful recollection clings in my mind about the Melozikaket region, for it was here late one August that I saw the most delicately charming aurora of my experience. Many people entertain the notion that the northern lights occur only in winter; but they are to be seen in Alaska as long as there is any darkness in the spring, and again as soon as darkness begins to come in the later summer. The visitor who lingers into August or even late July is unfortunate if he see no display.

We were coming up the river again in the launch one perfectly still night. A crescent moon sailed amidst a cluster of stars in a serene sky. And in and out, back and forth, to and fro, twined and twisted around moon and stars with bewildering swiftness and complexity, greenish filaments of auroral light, as though a multitude of luminous serpents were attracted to the moon as moths are attracted to a candle. And moon and stars and writhing filaments of light were perfectly reflected in the swift yet placid water of the river, so that whether one looked above or below one saw them equally well. I have described in another volume some of the vast and splendid displays of the northern lights I have seen in the winter; this summer aurora lingers in my mind with a feeling of its singular loveliness, and as one sometimes

gets more pleasure from a delicate water-colour sketch than from a huge and imposing oil-painting, so do I recall this pretty little summer aurora that sportively enmeshed the silver moon and the diamond stars in a living network of opalescence against the purple velvet of the summer night, with more joy than many a more majestic one. Whistler could have hinted its exquisite beauty in a "nocturne"—but if he had, Ruskin would certainly have called him a coxcomb again.

Although I have not had occasion to become as intimate with this part of the river as with some others, yet I think the region between Nowikaket and Melozikaket is the most attractive to me of its whole course.

The clear brownish water of the Melozitna, issuing from a break in the mountain range and discharging in a little delta, runs distinct amidst the Yukon's turbid flood for some distance after the Melozikaket is passed, and just below, on the opposite bank, finely situated on rising ground where the mountains make a cirque, with a bold bluff at each extremity, lies Ruby, the most populous place on the Alaskan Yukon at the present time, and the only settlement of any kind, white or native, from Tanana to the mouth, on the left bank of the river. There used to be a newspaper at Circle, and one at Eagle; within my own time there were newspapers at Rampart and Tanana; but they are long since dead, and to-day Ruby is the only place on the whole American River where a newspaper is published—which is a pretty sure gauge of populousness.

Ruby sprang up in the early summer of 1911, as a

mushroom springs up in a night. I passed by on the winter trail in March of that year, and camped on the bank almost opposite the place, and the hillside was void of any evidence of human existence. In the following July I passed down the river in the *Pelican*, and the river-front was swarming with men, the beach was lined with boats of every description, the hillside was white with tents. News had gone abroad of a rich "strike" on a creek thirty miles behind this spot, and, so soon as navigation opened, a stampede from every mining-camp in Alaska had taken place. Before the close of navigation that year all the canvas places of business and most of the canvas residences were replaced by wooden structures and the town had assumed almost its present form.

The "strike" on Long Creek did not turn out to be so very rich, except in spots, but a number of smaller strikes were made in the vicinity, and the camp has been a fair producer for the past five or six years. How long it will last no one can say, but by and by the placers will be gradually exhausted, and since Ruby has no other reason for existence save as a port and mart for the placer-mines, it will dwindle with them.

It is unfortunate that there was no law regulating the building of towns along the river when Ruby was laid out. As it was planned, the main street faced the river, with only one side to the street, and the business houses fronted without obstruction upon the beach. But the cupidity of late comers, with no law to check them, led to the building of another side to the street,

THE TOWN OF RUBY IN ITS FIRST YEAR, 1911.

LOWDEN.

and the backs of these later erections with their outhouses and domestic offices now line the water-front and give a squalid aspect to the town from the river. So was one of the finest town sites in Alaska spoiled. It is unfortunate, also, from the point of fire protection. Ruby has not yet suffered from any serious fire, but the huddling of buildings so closely together upon the water-front is likely to make any fire a serious one. From Ruby, by way of Ophir and Tacotna, runs the winter trail to the Iditarod, passing through the Innoko camp and making connection with the overland trail to Anchorage and Seward on the coast. Ruby has a resident commissioner and deputy marshal, and it is one of three places in the interior where a session of the district court is held.

The channel swings back to the right bank again so soon as the bend below Ruby is reached, and hugs that bank past the old "Melozi" telegraph-station (ten miles below Melozikaket), past the little trading-post with a few native cabins, known as Lewis's Landing, and still on down to Lowden, a native village where is a trading-post and a government school some thirty-five miles below Ruby, keeping almost in one straight line against the mountainous bluffs of the right bank, with low, wooded country on the other shore all the way.

But below Lowden comes a change; the river turns rather sharply to north of the general westerly direction it has been pursuing, and leaving mountains behind it for twenty-five miles, enters a flat country which is, in fact, the mouth of the great valley of the Koyukuk—the

Koyukuk Flats. And as the Nowikaket-Melozikaket stretch has been described as one of the most picturesque on the whole river, so this stretch through the Koyukuk Flats is one of the least attractive. It has all the monotony of the Great Flats above, without the appeal of their spaciousness, without the interest (to most visitors) of their penetration beyond the limits of the geographical frigid zone.

Ten or twelve miles above the Koyukuk mouth, on the right bank, stands a bold, solitary mountainous bluff, against the base of which the current runs very heavily, and near the summit of which an iron cross has been erected. In this neighbourhood occurred the murder of the Roman Catholic Archbishop Seagher of Oregon, in 1885, by a half-breed attendant, when engaged upon a missionary prospecting journey in the winter. The criminal was tried and convicted at Sitka, but there seems to have been absence of adequate motive and doubt about his sanity; he was imprisoned for life, but, I am told, subsequently released. The memorial cross was erected by the Jesuit Fathers of Nulato, and the bluff, known as the Bishop Mountain, is the most prominent landmark hereabout.

We now approach the confluence of the Yukon on its right bank with one of the most important of all its tributaries, the Koyukuk, the last great affluent which it receives. By a number of sloughs and intricate channels the waters of the Koyukuk find their way into the Yukon, but the main stream of the Yukon keeps to the opposite shore, and to reach the settlement at the well-

defined principal mouth of the Koyukuk it is necessary to go down below it, cross the river, and turn up around a sand-bar, except at high stages of water. Two lofty mountain bluffs of peculiar shape on the north side of the Yukon and the west side of the Koyukuk are landmarks of the confluence.

This great river, navigable for light-draught steamboats between five and six hundred miles,* with an important gold-mining camp seventy miles above the head of its steamboat navigation, deserves and will receive a chapter to itself, but the magnitude of its drainage basin may be judged from the fact that its headwater tributaries interlock on the east with the tributaries of the Chandalar, which enters the Yukon about thirty miles below Fort Yukon; on the west with those of the Kobuk and the Noatak, which empty into Kotzebue Sound, and on the north with those of the Colville, which empties into the northern ocean.

Besides the native village, the settlement at the mouth contains a trading-post and a telegraph-station, but the place is of slight importance, since the port of the Koyukuk is Nulato, twenty miles below. The twenty miles' journey is all along the right bank, which during the salmon run is usually lined with fish-wheels at short intervals. I once counted fifty wheels within this distance.

Historically considered, Nulato is the most important point on the Yukon River. It is the site of the first set-

* One of Dall's egregious blunders is to put the length of this river "including tributaries" at one hundred miles. It shows how little was known about the country by his informants, and illustrates the limitation of the value of the book to what he himself saw and measured.

tlement made on the river by white men, for in 1838 the half-breed Malakoff, in the employ of the Russian Fur Company, ascended hither from St. Michael and built a fort and a trading-post. This, however, was destroyed by the Indians, was again built and destroyed, and it was not until 1841 that Derabin, another agent of the Russian Fur Company, established the place permanently and remained in command until he was killed in the notorious Nulato massacre of 1851. Dall, who wintered there sixteen years later, gives a very circumstantial account of the affair, which received prominence, not only on account of the number of lives sacrificed, but on account of the inclusion among the victims of Lieutenant J. J. Barnard, of the British ship *Enterprise*, engaged in the search for Sir John Franklin. He had been detached by Collinson at St. Michael to proceed to the Koyukuk River and inquire amongst the Indians whether anything had been heard of shipwrecked white men making their way overland from the arctic coast, and although a message sent by him to the chief of the Koyukuk Indians that gave umbrage to that important personage is commonly considered as the cause of the massacre, yet in all probability Barnard and his message had nothing to do with it, and he met his fate merely because he was accidentally present at the time. The unfortunate Russian who brought the message from Nulato was murdered, killed, and eaten (so the story runs); the only case of deliberate cannibalism as against the cannibalism of starvation I have ever heard charged against the natives of the interior. A band of Koyukuk Indians

The Bishop Mountain near the Koyukuk mouth.

At the site of the Nulato Massacre of 1851.

came down in the night to Nulato and a clean sweep was made of the Nulato Indians; three large houses, containing a hundred sleeping men, women, and children were burned down, and those who sought to escape were shot with arrows as they emerged from the flames. Then the fort was attacked and the factor, Derabin, Barnard—who was his guest—the interpreter, three children, and their mother were all slaughtered.

How much of this savage butchery was due to the oppression of the Russians and their brutal treatment of the Indians,—of which Dall was witness when he wintered there;—how much of it to the rival pretensions of Koyukuk and Nulato shamans, or medicine-men, which the Jesuit fathers, who knew some of the participants, in their old age and piety,—incline to regard as the chief cause;—or if Barnard's message were aught else than a spark that fired long-accumulated combustibles, will never be definitely known.

Barnard's grave is still kept neatly by the Jesuits, and a long Latin inscription has replaced the brief English one written by the ship's doctor who had accompanied him, but was fortunately absent that fatal night. One would think, however, that the British admiralty would mark the spot with a permanent stone and an iron fence, for Barnard died in the execution of his duty.

Of late the river-bank of the scene of the massacre, which is about a mile below the site of the present town, has been cut by erosion of the current, and many skulls and bones and copper household utensils and beads and

buttons have been uncovered from amongst rotting, charred timbers, and carried off by "souvenir" hunters. I, myself, though not of that great company, dug out of the bank with a stick a brass button bearing the imperial Russian double eagle—evidently from a uniform coat—and was interested to see, with a magnifying glass, on the back of it the word "Birmingham," and I wondered if official brass buttons are still imported into Russia.

The natives of the lower Koyukuk have always borne a bad reputation, in marked contrast to the good character of Alaskan Indians in general, and the recent (1915) trial of one of them on the charge of murdering a white man a number of years ago for the sake of his outfit of grub, while it failed for lack of legal evidence, left an impression upon many who were present that the crime had been committed.

Dall says that for years before his time the Koyukuk Indians had obtained intoxicating liquor from traders who visited Kotzebue Sound (eight hundred miles away by rivers and portage) and thinks that "this circumstance had done much to render the tribe, naturally cruel and turbulent, one of the worst in the territory"; but this explanation (like the liquor) is far-fetched, though, of course, Dall did not know how far-fetched, for he thought the Koyukuk but an hundred miles long.

Whatever the cause, the Indians of the lower Koyukuk have always borne a bad name. The tribe has dwindled to a handful at the Koyukuk mouth, and they bear a bad name to-day. Little has been done for them;

even the government school, maintained for a few years, has been abandoned since the accidental burning of the schoolhouse. They are attached nominally to the Roman Catholic mission at Nulato and are visited occasionally by a priest.

Nulato itself boasts a couple of stores, a resident commissioner and deputy marshal, an elaborate radio-telegraph station, a considerable mission establishment, and a very picturesque burial-place, perched on the peak of a rocky bluff, bright with gaily painted graves and fluttering pennons. There is also a resident physician in the employ of the Bureau of Education, who has converted a building intended for a school into a little native hospital of half a dozen beds, and this physician and his hospital, and a like establishment at Mountain Village near the mouth, represent all that the United States Government is doing to-day for the health of the natives of the whole Yukon River, save that a few drugs are intrusted to the custody of the teachers at government schools. It is not the fault of the Bureau of Education that this is the case. Year by year for many years past the Bureau has asked Congress for additional appropriations that would permit some general efforts for the prevention and cure of disease, and, year by year, these additional appropriations are denied.

Travellers on their way to the Koyukuk diggings are transferred here to light-draught steamboats that make the trip to Bettles three or four times during the summer, and since there is no regular schedule of sailings they often have ample time to acquaint themselves with

whatever of interest Nulato affords, to investigate its industries and reflect upon its history.

Like Tanana, Nulato has no tributary gold-mining; its commercial importance that is not dependent upon native trade is due to its position as port for the Koyukuk.

CHAPTER VI

KALTAG, ANVIK, HOLY CROSS, THE PIMUTE PORTAGE, MARSHALL

THE next stage of the river journey is the forty miles from Nulato to Kaltag, again almost wholly along the right bank with continuous mountain bluffs all the way, and low, densely forested land to the left, and little to demand description or comment. About midway is an old coal-mine, from the deserted shafts of which the steamboats sometimes procure ice in the height of summer if their supply falls short.

Almost anywhere below Tanana the traveller voyaging down-stream may pass a steamboat with a tow of two or three barges, slowly forging against the current, pushing fifteen hundred tons of food and machinery and general merchandise ahead of it; for so the interior of Alaska is supplied. One of the barges will perhaps be left at Nulato, and a lighter-draught boat will pick it up by and by and push it ahead to Bettles at the head of Koyukuk navigation. Another will be dropped at Tanana for the light-draught Tanana steamboats to take in tow, and another for the boats that ply the upper river, or it may be that one will be left at Ruby to unload at leisure while the steamboat proceeds to Tanana and picks up the empty barge on its return. The fine "packets" and the powerful freight-boats rarely go

above Tanana nowadays, though when they were put on the river their run was the full sixteen hundred miles to Dawson. Year by year for ten years past the river tonnage has steadily declined, until the season of 1916, when material and supplies for the construction of the government railroad from the Nenana base gave a fillip to freights.

Kaltag is chiefly notable for the easy passage to salt water which it affords, for the Yukon here approaches Norton Sound so closely that in ninety miles' walking one may reach Unalaklik. Unalaklik is about sixty miles from St. Michael, so that within one hundred and fifty miles one may reach St. Michael from Kaltag, instead of the five hundred and fifty or more which is required by the river journey. But the portage is, of course, only available with any facility in the winter, and it is this route which the mails for St. Michael and Nome take at that season.

The military telegraph-line which used to come all the way down the river from Tanana, cross the portage, and follow the coast to St. Michael, now ends at Nulato, and the radio stations at that place, at Kaltag, and at St. Michael, flash their messages through the air without the aid of wires. The operator's cabin at Old Woman Mountain was the half-way stopping-place on the journey to Unalaklik, and here again, while the signal-corps men are relieved of a very lonely exile, the portage trail must be left still lonelier for the withdrawal.

Gradually the radio stations are superseding the land wires throughout the interior of Alaska. The land wires

were expensive and laborious to maintain. Passing, as they did in the main, through densely forested country, every high wind and storm endangered them; in the winter, especially, the task of repairing the lines and keeping them continually open was sometimes one of great severity, and the infantrymen, attached to each station for this purpose, often suffered from exposure to the extreme cold. Moreover, despite their utmost efforts, communications were frequently interrupted.

The "wireless" has, of course, troubles of its own. The despatch of messages is much slower than with the land lines, and the receipt of them is sometimes greatly hindered, or even for a while entirely prevented, by certain atmospheric, or perhaps it were more proper to say ethereal, conditions, that are very obscure. But in a country like the interior of Alaska, where the total number of messages sent is comparatively small, the advantages of the wireless stations are so great that it can be only a question of time when the land wires will be abandoned altogether.

There now lies before us the longest stretch of the whole Yukon on which there is no sort of settlement important enough to find place upon a map—the hundred and sixty miles or so between Kaltag and Anvik. By far the greater part of the steamboat course lies close against the right bank, with mountains coming to the water's edge or never far from it, all the way. To the left is low-timbered country with a distant range—the Kaiyuh Mountains—visible beyond, and behind that range the Innoko River is flowing to its junction with

the Yukon in the Chageluk Slough; beyond that again, a wide, mountainous region intervening, the Kuskokwim has united its forks and will soon begin to approach the Yukon. Through the low-timbered land on the left bank one of the curious detached channels of the Yukon flows, called the Kaiyuh Slough, leaving the river about ten miles above Kaltag and returning to it about ten miles below, and receiving a small tributary named the Khotol.

From the mouth of the Koyukuk all down this stretch of the river, and still farther, to the Russian Mission, the traveller is going steadily to the south. The influence of the lowered latitude, while it is not apparent at a glance, is none the less felt. I have found ferns amidst the rocky gullies of this shore, and in the depths of the woods a little way from the shore, that I have never seen higher up the river. The extreme cold of Fort Yukon and Tanana is much rarer here; the mean temperatures are higher; the climate has grown slightly and insensibly milder, and I am sure it has grown more humid. The general character of the vegetation is the same; spruce of two varieties, cottonwood, birch, and willow, are still almost the only trees.

Here and there a native fish camp, here and there a white man's fish camp, dot the shore at wide intervals; here and there a pile of cord-wood awaits a steamboat. The fish-wheels creak and groan as they revolve in the current, and if a "run" be on, the traveller may see silver salmon or dog salmon floundering and flapping in the "buckets" or sliding down the chutes into the box

A FISH-WHEEL ON THE YUKON RIVER.

at the side. But perhaps, once more, the loneliness of the great river makes the deepest impression on the traveller's mind. It is eighty years since white men began to use this river; it is fifty years since it came into the possession of the United States; yet here, in the neighbourhood of the earliest settlement, is naught but the unpeopled wilderness. The natives of these parts have unquestionably greatly diminished; a mere handful of white men have come in their place. I doubt if there be a dozen in this one hundred and sixty miles; I can count no more than half that number.

Forty miles above Anvik, with the channel on one of its rare excursions to the left bank, the remarkable detached arm of the river known as the Chageluk Slough leaves the main stream to meander one hundred and twenty-five miles and return to the Yukon at Koserefsky, forty miles below Anvik, receiving the considerable Innoko River in its course; a duplication on a much larger scale of the Kaiyuh Slough near Kaltag. But the Innoko and its tributary, the Iditarod, will receive special attention elsewhere, in which place it will be more convenient to deal also with the interesting region of the Chageluk Slough.

Anvik is perhaps more picturesquely situated than any other settlement on the Yukon. The Anvik River, a stream of clear water, comes in on the right bank, and about a quarter of a mile above the confluence, on the right bank of the Anvik, the mission buildings of the Episcopal Church nestle against a steep, wooded ridge, and look out across the narrow strip of lowland covered

with fishing camps that makes the other bank of the Anvik River, to a wide and beautiful up-stream prospect of the Yukon and its distant, diminishing bluffs.

Thirty-one years ago a mission work was undertaken at this place. Thirty years ago the Reverend Doctor John W. Chapman arrived to conduct it, and it has been in his charge ever since. The early accounts of the place agree in speaking of its inhabitants as amongst the most degraded on the Yukon River. We are fortunate in having an indifferent account contemporary with the beginning of Doctor Chapman's work, by the first member of the United States Geological Survey who came down the Yukon. He describes the Anvik natives in 1887 as living in underground huts, the place reeking with filth and intolerable stench, the greater part of the people seemingly diseased, and presenting on the whole the most miserable and wretched appearance of any human beings he had ever seen.

He goes on to say somewhat petulantly that if the young clergyman he saw there would take off his coat and start cleaning up, it would be better than walking the beach in his clerical clothes. I cannot put my hand on the report to give the name and the exact words of the writer, but this is the substance of it as I well remember. Doctor Chapman had just then arrived, though the geologist did not know that; if he had returned to Anvik any time these twenty years past he would have been compelled to admit that Doctor Chapman had taken off his coat to some purpose.

For there has been marked improvement. The

THE MISSION BUILDINGS AT ANVIK.

underground houses are long since gone; the people are well sheltered in cabins with little garden-plots around them, and are comparatively healthy; a school has been maintained from the first and there are some twenty boarding pupils from the Chageluk Slough and from up the river.

Like the long, scarcely inhabited stretch from Fort Yukon to Stephen's Village, the long stretch of the river just passed over brings change in the native people and the native language. The Anvik River has its lower course parallel with the Yukon; but it heads in the mountains near the shore of Norton Sound and its tributaries interlock with the tributaries of the Unalaklik River. It has thus always afforded easy communication with the Eskimos, and in Dall's day, and one knows not how much earlier, the hardier and more virile and better-armed Eskimos dominated these particular river people. Moreover, the Eskimos of the wide delta country at the mouth of the river have extended their influence and their blood thus far up. Though in the main Indian, the Anvik people are a mixed people, and, certainly at first sight, give one the impression that they have inherited a double portion of the phlegm of both races. The visitor is likely to find them taciturn and unresponsive, not to say morose, beyond the inhabitants of the upper reaches of the river.

The mixture of blood and the modification of language and custom are not the only matters that differentiate these people from those who inhabit the upper regions of the river. We are out of the common range

of the big game here; moose and caribou are rare, and the mountain-sheep is unknown. We are come to the ichthyophagi, whose steady diet of fish is varied by little else than the spring and autumn water-fowl. Rabbits and squirrels and some small deer, and berries, and the produce of their little garden-plots enter into their diet to some extent, but in the main they are fish-eaters; and such are all the remaining natives of the Yukon down to the sea.

Now, it has been observed by travellers for centuries and in many parts of the world that an exclusive or largely preponderating diet of fish does not tend to the upbuilding of stamina, and there seems ample ground to believe that a more vigorous constitution, a more sanguine temper, and a more vivacious and enterprising disposition may be looked for amongst those whose diet includes flesh to a considerable extent. How much of this difference is due to purely dietetic considerations and how much to the habits of activity, agility, and vigilance fostered by the chase, as against the sedentary life of the fisherman, I am not prepared to say, but I never pass down from the Indians of the upper and middle river to those of the lower river without feeling sure that I can observe this marked division between the fish-eaters and the flesh-eaters.

These considerations render the Indian or mixed Indian and Eskimo of the lower Yukon much more difficult subjects than their kin of other parts for missionary work, using that term in the way I always use it, as including all practicable improvement in habits and char-

acter and mode of life. They are exceedingly tenacious of old custom and resistant to new; superstitions which are almost forgotten on the upper river are still potent here, despite thirty years of continuous teaching.

But if Anvik lack food from the land, what a wonderful harvest it secures from the water! I have seen "the abundance of the sea" in many places, from the Alaskan coast to the Mediterranean, but I had to go to Anvik to understand the abundance of the river. Fish-wheels are not much in use in these parts, because they are not needed. During a run of salmon the nets and traps are no sooner set out than they are full and running over, and often have to be taken up altogether until the cutters and cleaners can catch up with the overwhelming supply. Little more than three hundred miles from the mouth of the river, when they reach the place the fish are not exhausted and gaunt by long, fasting travel, as they are at Fort Yukon and even begin to be at Tanana, but are fat and fresh from two-and-a-half years' sojourn in salt water.

Is there anything in nature more wonderful or more tragic than this migration of the salmon? After thirty months at sea, during which time nothing whatever is known of them, back to the very spot where they were spawned a mysterious instinct drives these fish; and to reach that spot may involve a journey of fifteen hundred miles up the muddy Yukon, and its tributary, and its tributary's tributary, until at last the clear stream or lake is reached where they were born; and during the whole of that journey nothing is eaten. I have asked many fisher-

men, white and native, in many different parts of the Yukon, whether they ever found anything in the stomach of a salmon, and the answer was always in the negative, and that is the universal testimony on the other rivers used by this fish. Of the comparative few that reach their destination and perform the act of reproduction which is the object of the journey, the great majority die very shortly thereafter. The circle of their lives is complete when they have reached the waters which gave them life and have transmitted that life to others.

Consider, from the point of view of a mechanical problem, the prodigious exertion of power involved in the journey of fifteen hundred miles—and this is certainly not the extreme distance travelled—through icy water, against a swift current, without any reinforcement of strength from food. What dynamic reservoirs the bodies of these fish must be, and what an economical expenditure thereof the fish's characteristic mode of propulsion must be, as compared, let us say, with a screw-propeller. As man has learned of the birds in his cleaving of the air, may there not yet be something to learn from the fish in the matter of progress through the water?

Consider, again, the astonishing faculty that enables this fish to return to its individual spawning-ground. The Yukon is so muddy and clouded that the fish cannot see, and therefore cannot avoid, the sweeping arm of the fish-wheel that scoops them up if they come within its range—for fish-wheels are useless in clear water—and yet they can determine precisely the spot at which to

A NATIVE FISH-CAMP ON THE MIDDLE YUKON.

leave the broad river, to the right hand or to the left, can tell what tributary to ascend and just where its confluence is. Only once before has the fish been in this river, and that was when, a fingerling of two or three inches in length, it made its rapid journey down to the sea. It seems idle to talk of memory. What man, issuing out of a lake that feeds a brook that falls into a creek that discharges into a tributary of a tributary of the Yukon, and, passing once many hundreds of miles down these waterways to the sea, in daylight, with all sorts of landmarks to aid him, could undertake to return to the spot whence he came two years and a half later? But after the salmon enters the Yukon from salt water it can see nothing; then what wonderful power of water-analysis must this creature have to determine the peculiar characteristic of each stream he passes by until the one is encountered that carries his native water! What infinitely delicate faculty of taste or feeling! Indeed, the more we try to reduce the thing to intelligible terms the more incomprehensible it becomes. We cannot explain it; the childish explanation of the medicine-man is as valid as any attempted explanation of science; to talk about "irresistible instinct" and "imperious demands of nature for the propagation of the species in a favourable environment" does not explain it at all; it is like explaining the mystery of the firefly by stating that it has "a photogenic apparatus in its abdomen"—of course it has —the Cuban girl who pins it in her hair knows that. It is time that intelligent people emancipated themselves from the superstition that to speak about things in long

words is to explain them. We cannot explain the wonders of the spawning migration of the salmon; we only know from accumulated evidence that they are so. In other streams of the Pacific coast, frequented by the same species, careful and long-continued observations have established the facts with certainty.

Although not so completely dependent upon the salmon as the natives of the lower river, the upper-river people also would be at sore loss without it. The chase is more or less precarious everywhere; the harvest of the water is sure. Dried and smoked, the fish are stored up for the winter, and furnish a large part of the subsistence of man and dog. In some seasons the catch is plentiful and in others it is scant, but it never fails altogether.

Here at Anvik, however, it is always plentiful. The flat camping-ground of the peninsula at the mouth of the Anvik River begins to bloom with great racks of red fish early in the season, and before long, acres and acres are covered with them. What tens of thousands of fish may be caught the summer through I know not, but the number is immense. The very profusion of the fish induces carelessness in the curing, and Anvik fish has a name for being insufficiently cleaned and smoked.

First comes the king-salmon, and the capture of the first fish of this largest and finest species is a notable occurrence anywhere on the river, and marks the opening of the season. Who does not relish the first steak from a fine king-salmon? Two lean months have passed, with no mitigation of canned and dried food, save an occasional duck or goose. But very soon one

grows satiated; the king-salmon is too fat, too rich, too highly flavoured for a steady diet, and unless there be naught else one turns from it. Presently the silver salmon comes, more delicate and less oily; then comes the great run of dog-salmon, and, lastly, late in the season, a run of "chinook" salmon, by many preferred in flavour to all the other kinds.

The fish camp at Anvik, with its many tents, its smouldering fires and its swarming native people and dogs, is a picturesque sight, but like many another picturesque sight it is more agreeable when viewed from a distance than when inspected at close quarters. It reeks of fish and smoke, and the clear water of the little river, almost stagnant at the point of confluence, is fetid with offal. Moreover, the flies and mosquitoes are intolerably numerous the summer through; it is not safe to go ashore anywhere in this region without veil and gloves. Mosquitoes are bad enough all along the river, especially in warm, moist summers, but they seem to reach their worst in these parts.

The salmon, as even the most casual summer visitor must notice, is thus a most important factor in the economy of interior Alaska, and I have gathered what was to say of the salmon into these recent pages, reserving it until we reached the region of greatest abundance instead of scattering it throughout the book.

The shaman, or medicine-man, that tyrant of all primitive peoples, still holds sway in this portion of the river, though elsewhere his power has greatly waned and in many places has altogether gone. Here he exacts

the old tribute from a considerable portion of the people, and even when he does not work openly there is reason to believe that he carries on his conjurations and exorcisms in secret. Among the evidences of Eskimo influence is the kazheém, or communal sweat-bath and men's club-house, an institution not found above this point on the river, and the kazheém is the stronghold of the shaman. Here new-born children are brought for certain mystic ceremonies, and here heathen rites of the dead are performed.

It is a very difficult matter to decide what native customs are merely innocuous and therefore to be tolerated as part of a racial cult by men of feeling who do not lay hands wantonly on ancient custom, and what are pernicious and therefore to be suppressed. There is much that is merely commemorative and symbolic about the tribal observances of such primitive people, and there is much that is openly or covertly immoral; there is much that does not go beyond our own folk-lore and fairy-tales, and, again, there is much that has no other reason than the expression and propagation of a belief in witchcraft and magic. And even when, after much study and familiarity, the discrimination can be made, it is hard to sift out the elements of evil and secure their abandonment.

My own feeling is that in the process of time and education and persistent Christian teaching the thing is bound to come around and right itself. A primer of elementary physics is a good antidote to a belief that the shaman can conjure storms; a modern hospital is the

best rival to the witch-doctor, and the teaching of the love of God will ultimately abolish the childish terror of evil spirits. Moreover, I can declare with Wordsworth that

> "I'd rather be
> A pagan suckled in a creed outworn"

than go about this beautiful and mysterious world with no religion whatever, as so many people with eyes and ears in their heads do to-day; I had rather believe in the power of the medicine-man than in no power at all beyond the blind forces of nature; rather hold to his venal and sordid and self-deluded supernaturalism than deem myself caught in the wheels of a cosmic machine without brains or bowels or consciousness.

For there is this much truth in the old primitive animism;—it recognises that the world and life are full of deep mysteries, that there is something in man superior to himself and to his environment that does not die with the death of his body, and it seeks, however crudely, if not to penetrate these mysteries, at least to lay hold upon them, to keep in touch with them, to give new glimpses of them that shall make men less forlorn; it feels out, blindly, groping towards them; and I have a tenderness and compassion for the infant gropings of mankind that will not let me treat them with harshness and contempt.

Early in the summer of 1912 I was at Anvik, a few days after the eruption of Mt. Katmai had overladen the island of Kadiak and all the circumjacent sea with

volcanic scoriæ. The natives had listened with awe to the distant detonations, had seen with dismay the obscuration of the sun, the sudden blackening of the altar cross and vases and all bright metal by the sulphur-laden air, the ground covered with a white, impalpable fluff of ash lighter than the finest snow; and the medicine-men had been summoned from all around to consider what this might portend. The perturbation amongst the people was still evident, the necromantic conclave yet in session. There was the fat, stolid, crafty local practitioner, who seeks to run with the hare of the old profitable cult and hunt with the hounds of the mission; there was the little, wizened, ferret-eyed "Barmazilia medicine-man," thought by his adherents to be endowed with a quite superior thaumaturgy; there was the most fanatical of all, the old Chageluk Slough shaman, from that stronghold of custom and tradition. And I would have given much to have entered, not, indeed, that conclave, but the minds of the participants. Did they, these repositories of the legends of the race, recall some ancient instance of similar disturbance? Did they, "amidst the tumult from afar" hear "ancestral voices prophesying war," like Kubla Khan? From the deep recesses of their old animal mythology, did they evolve some explanation plausible to the native mind? Whatever their conciliar deliverance may have been,—and no word of it transpired,—one reflects that they knew exactly as much about the ultimate causes of volcanic activity as the most noted professor of volcanology, and that is nothing at all. Internal fire of course there is, indeed the

earth seems to have some sort of pyrogenic apparatus in *its* abdomen.

We pass the little village of Barmizilia, about twenty miles below Anvik, and in another twenty miles are at the considerable native village of Koserefsky, where also is the chief Roman Catholic centre on the Yukon, the mission of Holy Cross.

Situated just opposite the point where the Chageluk Slough, bearing the important waters of the Innoko River, returns to the Yukon, Holy Cross (for village as well as mission tends to bear that name now) is of commercial note as the transfer-point for the Iditarod mining-camp. Here an old steamboat fitted as a hotel is moored, and receives passengers who must wait for transfer to the mining-town and the diggings.

But the chief importance of the place is the mission, with its school. Here is the largest boarding-school in the country, and visitors are always interested in the uniformed native pupils, to the number of nearly two hundred, who often come down to meet the steamboat. The spacious church, with its lofty tower, is the finest building on the Yukon River, unless the church at the Russian Mission at Ikogmute should dispute its supremacy; the dormitories and schoolrooms are capacious and substantial buildings, and the whole group is imposing in size and scope when contrasted with the meagre establishments that, for the most part, have been met with hitherto.

A man may write thus who does not care for their architecture at all; who holds that, for æsthetic and prac-

tical reasons alike, log buildings are far more suited to the country than buildings of lumber, who prefers the sober dignity of the native tree, with its natural bark, to all the bravery of white and green paint. Log buildings seem to grow out of and, therefore, to fit into, their forested environment, and thus to be racy of the soil; painted lumber seems exotic, seems to have been obtruded into the northern wilderness.

But large buildings are not all that Holy Cross has to interest the visitor; here is a greater extent of cultivated ground than anywhere else on the river, save at the Experimental Station at Rampart, and here is that strange sight in Alaska, a herd of milch cows. Everything that can be extracted from the soil, directly or indirectly, for the subsistence of the school, is diligently sought, and the fathers of the Jesuit order, in whose charge this work has always been, deserve warm congratulation for their enterprise and industry. A steamboat of good size, named *St. Joseph*, is maintained for the transportation of supplies from St. Michael to this and other Roman Catholic missions, and a herd of government reindeer, after withdrawal of these animals from the whole Yukon for a while, because they had dwindled rather than increased, has lately been restored to Holy Cross and to the Russian Mission.

Three or four clergy, half a dozen sisters, and a number of lay brothers, drawn from the great army of devoted workers all over the world that the Roman Catholic Church commands, are attached to this institution, and permit undertakings that the slender

THE ROMAN CATHOLIC MISSION AND SCHOOL AT HOLY CROSS.

A NATIVE GRAVEYARD ON THE LOWER YUKON.

staffs and stinted resources of other missions cannot attempt.

Without in the least desiring to be critical, one may perhaps be permitted to express surprise that so large a staff has never included a qualified physician; that amongst the numerous buildings there is not a modern hospital. For if the bodies as well as the souls of these native people deserve attention, and efforts to ameliorate the conditions of their physical existence be justly within the scope of missionary service, then the efforts of a skilled physician are of an importance which, if it be not equal to the purely spiritual work of the mission, is certainly equal to its educational and industrial work.

The native population of these parts—and this includes Anvik—is certainly greatly reduced. Even in Dall's day there were evidences of a much larger population in times not remote, and since that day destructive epidemics of disease have scourged the whole region of the lower river. In 1900 (the year of the great stampede to Nome) a disease resembling measles made its way up the river from St. Michael, slaying a large proportion of the inhabitants of every village in its course. I was told by the superior of the mission at Holy Cross that half the native people of the place died in that visitation.

One is sore to think of the lives that might have been spared, the depopulation that might have been checked, had there been adequate medical service at hand, for a priest with a smattering of medicine and a sister with a few drugs and bandages are a poor resource against

epidemic sickness. I would not even hint blame on others without taking full share for the communion I represent. In all these thirty years we have had for only two or three years—and that long ago—a resident physician at Anvik; and it is only recently that we have provided medical facilities at Fort Yukon and Tanana. But Anvik is a small place compared with Holy Cross, and has never had more than one man and two women at work—until a year ago, when, owing to his length of service and advancing years, Doctor Chapman was provided with a lay assistant. Having the survival of the native people more at heart than anything else, if I had the money I would provide an adequate modern hospital for Holy Cross and the stipend of a qualified physician; and if this should meet the eye of a generous member of the Roman Catholic Church, of means equal to the task, I would plead that in no other way could greater good be done to the people of the lower river. If it be possible to lay up treasure in heaven by helping the distressed or the unfortunate (and I am of that opinion) I can think of no way in which a balance may be more surely transferred to the celestial account than by providing the zealous men and women of Holy Cross with the means of caring for the sick of their region of the Yukon.

It is easy to say it is the business of the government; we contented ourselves with saying that for many years; now we do not talk any more about the government in connection with the native people of Alaska; the government is blind to everything save mining-camps and town sites, deaf to everything save the screech of its new

locomotives. It is the business of the church; to save the people alive in the land we must *make* it the business of the church.

Sometimes while standing for hours at the wheel of the launch *Pelican*, slowly grinding up-stream, or slipping swiftly down with the current, or while trudging on snowshoes ahead of the dogs in the winter, beating out a trail for them through the snow, I dream and speculate about the future of this vast, lonely Yukon country, and I can bring myself to no forecast in which the native people do not constitute the bulk of the permanent settled population of by far the greater part of it. It is a good and sufficient Indian country; it would support twice or thrice its present Indian inhabitants, as there is evidence it has done in the past; but it is not a good white man's country by any standard that countries have been judged by hitherto. White men of the trading class, of a certain shiftless, casual class, there will, I suppose, always be, and their blood will mix with the blood of the native, as it is mixing to-day, and will modify it to an increasing extent. Regions where valuable minerals are found will have a preponderating or even exclusive white population, so long as the yield persists.

But the visions that gladden the eye and fire the imagination of many, visions of great tracts under the plough and still greater tracts under fence for pasture, visions of ranches and farms and contented homes all over the Yukon wilderness, will not take form before my eyes.

Much comparison of a rather superficial kind is made with Norway by those who are possessed of this vision, on the assumption that climatic and agricultural conditions are similar. Let the assumption stand, and the fact remains that no more than eight or nine per cent of that country is under cultivation to-day after all the ages of its occupation, and that three-fourths of its population inhabit the regions immediately adjacent to the coast.

That a similar development is possible for Alaska I am quite ready to believe, but consider the enormous area that remains; consider the half-million of square miles and more that would correspond to Norway's waste hundred thousand. It is this vast inland region which, to my mind, will either be a wilderness inhabited by Indians or a wilderness not inhabited at all. Which is preferable? Shall the white man dispossess without any probability of himself entering upon possession? Shall he destroy with no likelihood of restoration? To wipe out a simple primitive people by liquor and disease is just as flagitious as to exterminate them with fire and sword, and the depopulated wastes of interior Alaska, if depopulated they be, will cry out on our boasted civilisation as loudly as the depopulated wastes of Asia cry out to this day on the merciless barbarism of Genghis Khan and Tamerlane.

I do not wish to claim for the work in which we are engaged and the similar work in which others are engaged any more than its due; I do not wish to claim anything at all for it save in so far as by presenting such claim that work itself may be aided to greater efficiency,

but I believe it is just to say that if the Alaskan Indian be preserved in the land it will be due more to the efforts of Christian missions than to all other influences put together. It is the missionaries who have fought the distribution of liquor, who have fought the flagrant, brutal immorality of low-down whites, who have spurred the laggard law to such efforts at enforcement as have been made, who have cheerfully incurred all sorts of personal odium in the struggle to protect the natives from those who for lust or gain would debauch and destroy them. The visitor is very likely to hear the echo of such odium, and should remember that the measure of the unpopularity of a missionary to the Indians amongst a certain class on the steamboats and in the drinking-shops and on the water-fronts of towns, may very possibly be the measure of his usefulness.

From Koserefsky to Ikogmute, that is to say from Holy Cross to the Russian Mission, is about another forty miles, in which the river maintains a course due south. The Kuskokwim, meanwhile, has been approaching the Yukon so rapidly that at a point on the left bank called Pimute they are separated by no more than thirty miles, as the crow flies. Low-lying lands, with lakes and streams nearly all the way, afford an easy passage from the one great river to the other in about double the distance just mentioned. This is the Pimute Portage, which has been in common use since the Russian days, when it served to connect the trading-ports from St. Michael to Nulato, with Redoubt Kolmakofsky on the Kuskokwim.

The Russian Mission is the sole surviving agency and evidence on the Yukon of the rule of the Czar in these parts. Its picturesque Byzantine architecture has the interest and attractiveness of a civilisation and a Christian culture strange to western eyes. One speculates as to what would have happened had the Purchase never taken place; would similar bulbous domes rise over Tanana?—would Fairbanks present the characteristic appearance of a Siberian town?—or would towns at Tanana and Fairbanks have ever existed?

The missionary work of the Greek Church is moribund in Alaska to-day—certainly in the interior and, one suspects, on the coast as well. For a number of years past it has been without any episcopal supervision, and has slackened and degenerated in consequence. Those who remember Bishop Innocenti and his progresses down the lower Yukon to St. Michael, will regret, at any rate, the loss of a picturesque and benevolent character, a not unworthy successor, one thinks, of the saintly Veniaminoff, whose praise is in all the books on Alaska, and the brightening of dull lives by impressive and gorgeous ceremonies. Here and there along the river, from Nulato down, may be seen graves surmounted by the same triple cross that rises above the church at Ikogmute, and since the form of that cross has become the mark of identification of the Greek Church and often excites curiosity and inquiry, it may not be out of place to explain that the uppermost crosspiece represents the superscription that Pilate wrote, and the lowermost crosspiece the support that received the feet of the

THE RUSSIAN MISSION AND THE CHURCH.

Crucified One. The angle at which this last is always inclined is purely conventional, as, of course, is the whole symbol. But whereas the plain or Latin cross has become the general symbol of Christianity, this peculiar form of it is, nowadays, the specific indication of the Greek or Russian Church, which, all told, must number amongst its members close to one hundred and fifty millions of mankind.

It is hard to find detailed and definite information about the planting of the Russian missions in Alaska, but this post dates back long before the Purchase. It was an old-established mission when the early explorers, to whom such frequent reference has been made, passed down the river. Much of the early history of Alaska still lies locked up in the little-known language of Russia.*

We are now amongst the Eskimos and have left the Indian people and the Indian language behind us. The skin boat, covered all over save where the boatman sits in a well in the centre, supersedes the birchbark canoe, the double paddle the single one, the much more developed Innuit culture the simpler and cruder Ingalik.

But while these people are of the same stock and the

* It is interesting that just when Miss Agnes Laut ("Lords of the North," "Pathfinders of the West," "Conquest of the Great Northwest," etc.) has been delving into the archives of the Hudson's Bay House in London, for the original story of the penetration of the continent from the east, Mr. F. A. Golder ("Russian Expansion on the Pacific") has been delving into the archives of the Russian Fur Company at St. Petersburg for the original story of the penetration of the continent from the west. So far Mr. Golder's work is in the main Asiatic and preliminary, but he promises a continuation which those concerned with the early history of Alaska will eagerly expect. Their work will meet, one hopes, on the Yukon. One wishes, however, that Miss Laut could borrow something of Mr. Golder's historical sedateness, and, in her turn, lend him a little of her superfluous vivacity.

same root language as the Eskimos of the coast, they are much modified by their river life. The Eskimos are the finest native people of which I have any knowledge, but I would not adduce these riparian folk in support of that statement; I would present the marine Eskimos with whom we shall come into contact by and by. For the same contrast exists between these divisions of the race as between the Indians of the upper and the lower river. The flesh of the seal, the walrus, and the whale takes the strength-giving place of moose and caribou and mountain-sheep meat, and the chase of these pelagic mammals in the stormy and foggy waters and amidst the ice of Bering Sea and the Arctic Ocean demands, and therefore in large measure produces, a vigour and a courage even superior to that required in the chase of the land-animals. But I must withhold my hand from the coast-wise Eskimos until we reach their habitat.

After leaving the Russian Mission the Yukon desists from its southerly course, having reached its lowest latitude in about 61° 44′, which is nearly the latitude of Lake Lebarge; it now takes a decided bend to the west and then to the north of west until Andreafsky is reached, after which its course is due north to its mouth. In these reaches the river becomes very wide; indeed, at times one bank is scarce visible from the other, and in rough weather navigation may become so difficult that steamboats will tie up for the wind and waves to abate.

About fifty miles below the Russian Mission we reach, on the right bank, sitting at the foot of a high hill known from a prospector's name as the Pilcher Moun-

TOWING BARGES OF MERCHANDISE UP THE YUKON.

tain, the new mining-town of Marshall, gold having been found on Wilson Creek in its vicinity in the summer of 1913. The creek was named for the President of the United States, and the town for the Vice-President. The camp was a small one and not very favourably regarded until the summer of 1916, when another creek (Willow) was found to contain much coarse gold amidst glacial boulders, and it is said that the output of that season reached the half-million mark. In the town (which is very small, for the diggings are close at hand) and the creeks, there were some two hundred and fifty whites in the summer just mentioned. The population of these camps varies so greatly from time to time that one does not care to set down a figure without appending a date.

The occurrence of gold so far down the Yukon was a great surprise to most Alaskan miners, and shows again how wide-spread is the distribution of placers throughout the whole territory. From the Chisana camp in the extreme east to Nome in the extreme west, from the Sushitna in the south to the Koyukuk in the north (with a strong probability of its discovery in the arctic slope beyond that), there is no region in which profitable fluvial deposits of gold have not been found. But it takes, and will always take, rich placers to pay for the extraction of the metal in continental Alaska. They are soon worked out and the country thereupon reverts to the wilderness. The very name "camp," by which diggings are always described, indicates that there is no "abiding city" in these settlements.

CHAPTER VII

THE DELTA COUNTRY, BERING SEA, AND ST. MICHAEL

DROPPING down an ever-widening river, the traveller who has observed nothing else must observe the great change that is gradually coming over the landscape. The spruce-trees are thinning out. Here at Pilot Station, a native village about twenty miles from Marshall, with a government school, a Roman Catholic church and two small trading-posts, is still timber, but in another twenty miles we pass the last spruce-tree. The familiar coniferous forest that has lined the banks ever since the voyage was launched at Whitehorse, and has given character to the river, is gone. Clumps of cottonwood will be seen here and there for a while yet, but the willow is now the chief growth. We approach the tundra country of the delta, covered with dense moss, from which springs scrubby willow brush; we approach the sea.

About a mile up the Andreafsky River, which comes in on the right bank about fifty miles below Marshall, is the abandoned post of Andreafsky, and at Andreafsky the tide is felt, though it is still one hundred and twenty miles to the mouth of the river. Almost the last hills lie about Andreafsky. On the left bank no elevation has been visible for many miles, save the dome of the solitary "Kusilvak" Mountain, twenty-five hundred feet high, which rises from the midst of the delta country far to the west. Already the largest mouth of the Yukon,

the Kwishluak, has led off its water from the main stream, that bifurcation taking place a few miles above. But this south mouth is not navigated in general; the steamboat exit is by the north or Aphoon mouth, which leads to St. Michael.

If the steamboat be an oil-burner she may put in to Andreafsky to pump oil from a barge, or she may put in to drop a barge or to pick one up, and, if so, the visitor will have opportunity to inspect a place that is not without interest.

The place dates back to a Russian settlement in 1853, and in 1855 it was the scene of a surprise and murder by natives similar to that at Nulató, though on a much smaller scale. As the two Russians who were in the fort came naked out of their sweat-bath they were set upon and killed with clubs and knives. Unlike the Nulato massacre, this outrage was amply avenged. A party from St. Michael crossed over the hills and exterminated the inhabitants of the village where the assassins lived. Says Dall eleven years later: "From that day to this not a native on the lower Yukon has lifted his hand against the whites." It is said that round the necks of the Indian assassins were found crosses, indicating that they had been baptised at the Russian Mission; but the Russian Mission is not the only mission which has had cause to repent the too early and too easy baptism of catechumens, in Alaska and elsewhere.

With the great development of steamboat traffic following the Klondike discoveries, Andreafsky became a place of much importance. It is the first convenient

harbour from the mouth of the river up, and since there is no port at the mouth of the Yukon, this place took something of that nature. Here were the warehouses, stores, and dwellings of the Northern Commercial Company. A mile above were the extensive winter quarters of the company, including machine-shops, a large hotel, a marine railway for hauling out steamboats, and an electric plant to light the buildings. Here the crews of many steamboats wintered that they might be on hand for the navigation of the river before it is possible to reach St. Michael by sea. Most of these plants still stand,* but the whole place is deserted and abandoned. The most interesting feature of the place is the "boneyard," as it is called, where a number of disused steamboats are hauled out to rot and decay. It was in the early summer when last I put in to Andreafsky, and, though it was near midnight, with the aid of field-glasses I was able to read some of the names of these derelicts, and I find "Tacoma," "Alice," "Victoria," "Gustin," written down in my diary as those I could make out, though there were a number of others. After the Northern Commercial Company absorbed the Alaska Commercial Company, it was the custom to maintain the virtual monopoly of the river by buying up any independent boats that were put upon it. It was cheaper, I suppose, to buy them up and haul them out than to let them reduce freight rates by competition.

* I have learned since writing the above that a violent storm in the winter 1915–16 levelled a number of these buildings with the ground, and that others were torn down and the lumber used in buildings at Marshall.

THE DIVERSIONS OF THE SQUAW-MAN.

There is an irresistible melancholy about such a place as this. Its extensive and substantial buildings uselessly burden the barren hillside, the stir of commerce is stilled, the warehouses empty, the fires under the steamboat boilers are long since drawn, never again to be lighted; the whistles will never again shrill the air and draw whites and natives alike hurrying to the bank. Here comes, perhaps, an old Eskimo in his skin canoe, with a salmon or a bucket of blueberries to sell, according to the season—and that represents the trade of a place that was once the most important commercial point below Dawson.

The times of the Klondike stampede were spacious times for the Yukon. Anything that could stem its current was valuable out of all proportion to the craft on any other river in the world. I wish I had the list that I suppose some one at St. Michael must have kept of every steamboat that went up the river. I wish I had myself kept record of the wrecked boats I have seen, or seen fragments of, or heard the story of, along the Yukon and the Koyukuk. I wish I had a complete list of the contents of the boneyards at Andreafsky and St. Michael. Doubtless the chief blow to the prosperity of the lower-river route and to the huge establishments at Andreafsky and St. Michael was the opening of the White Pass Railway and the steamboat line that connected with it in 1900, and the deflection of the traffic that followed. But in that year the Klondike had already reached its maximum output of $22,000,000, and the decline was so rapid that by 1906 it had been reduced

than one hundred miles of this coast there is positively no landmark of any kind. And if it be a gloomy, still day, as it was on the occasion referred to, with mist in the air premonitory of rain, I have seen no region of the earth so squalidly forlorn. There is no "glad, indomitable sea" here. Dull and stagnant lie the brackish waters, not two feet deep for miles and miles beyond the shore; the mud rises and more densely clouds them when the boat touches bottom; the birds do not frequent them, even the fish avoid them, and the moment one steps ashore the seeming solid ground is found to be naught but morass. There is not even "a magic in the distance, where the sea-line meets the sky" that accompanies the most commonplace coast, for sea and sky merge in a lifeless, indistinguishable blur. I think if the Czar had ever seen the delta coast he would have kept it for the exile of those political offenders he hated most.

It is here that the Yukon is depositing the burden it has so long carried in solution; it is here that it is continually extending seaward the great expanse of land (one wishes one could say *dry* land) it has already made, gradually building it out into Bering Sea, gradually filling up Bering Sea. Granite and shale from the tops of the highest mountains, ground up in the mighty mills of the glaciers to the smoothest paste, and carried off in swirling black floods from underneath the wasting ice-foot all the summer long, porphyries and quartzites from the foothills and pene-plains, sand that it has scooped from the frozen banks of the Flats, where it undercut

ONE OF THE MAZE OF WATERWAYS NEAR THE MOUTH OF THE YUKON.

them until they fell into its flood, mud from the shores of every one of its thousand tributaries and tributaries' tributaries, are all ultimately brought here. Here we might find the water-front of Fort Yukon that was eaten away so ravenously in the summer of 1916, and many an island that has disappeared altogether; and here, too, comes ultimately the wash of the sluice-boxes, carrying the fine flour gold that the most painstaking care of the miner cannot save, with vegetable mould and dead moss and the fine powder of rotten wood. It is all dissolved and swallowed up and transported hither, and here disgorged and thrown down. For a couple of hundred miles to the south, without counting indentations, the same thing is going on, for when there is an end of the Yukon's mouths the great Kuskokwim River takes up the work. Almost the whole eastern shore of Bering Sea is of this character. We recognise one of the great ceaseless processes of nature: "Every valley shall be exalted and every mountain and hill shall be made low." But the process is not beautiful on the shores of Bering Sea.

There are five main mouths of the Yukon,—the Aphoon, down which our steamboat will carry us presently, the Ok-we'-ga, the Kwik'-pak, the Kwish'-lu-ak (known by white men as the Kus'-sel-vick), and the Kwem'-e-luk. In spring and in any flood-time there are many more, of which the Kash'-u-muk opens into Hazen Bay, and is then navigable for all river-craft, though in summer it can be used only by canoes. Between this mouth and the last-mentioned of the five main mouths,

the Kwishluak, are a dozen small ones. These particulars of the delta, with the phonetic orthography of the native names, I owe to Mr. Frank Wasky, of Marshall, Alaska's first delegate to Congress, a careful and intelligent observer, familiar with the region.

Through this wide delta country, intersected everywhere with watercourses, and not traversable in summer save by these watercourses, are scattered several thousands of river Eskimos.

Missionary work is done amongst them by the Roman Catholic Church, which has a considerable establishment on the Nunavarrock Slough, between two of the mouths, and there are several government schools in the delta. I should say, however, that, on the whole, this delta country is one of the least-known parts of Alaska, and its natives least influenced in any way by contact with the whites.

I jumped from Andreafski to the mouth too soon, being led away by my indignation at the absence of all sailing directions on the river to tell of the *Pelican* blundering out to sea at the wrong place.

Twenty miles below Andreafski, where positively the last height of land is passed, lies Mountain Village, with a government school, a government physician, two traders, and a dozen cabins.

The steamboat turns at last into the northernmost or Aphoon mouth of the river, which presently takes a narrow and well-defined form, and passes Old Hamilton, where are a rather pretentious store for such a small place, and a little Roman Catholic chapel; and in a short

time more the wireless standard of Kotlik appears on the horizon, where is a Signal Corps station from which the passage of boats into Bering Sea is reported to St. Michael.

There is a bar at the mouth on which a dredge has been working for a number of years, sucking out the sand and mud at one end and casting it forth again at the other, and thus gradually deepening a channel. There is said to be not less than three feet of water now at low tide. The tide is small throughout Bering Sea, and is much influenced by the wind; it averages about three feet.

Once over the bar, the vessel is out in Bering Sea, in that large arm of it known as Norton Sound, with a voyage thereon of sixty-eight miles to the port of St. Michael before it. This coast is not as doleful as the delta coast below. The bold headland of Point Romanoff looms up some twenty-five miles distant, and the water is a little deeper; still it is, on the whole, a flat and uninteresting shore that we keep in sight.

Point Romanoff, say the cartographers, is the "Point Shallow Water" of Captain Cook, upon which the family name of the imperial house was superimposed in Russian days; and the steamboats give it a wide berth because three miles out no more than four feet of water is found. For we are now come again to the track of the great navigators of the eighteenth century, and Captain Cook is sponsor for the more important of the names we shall yet encounter, as George Vancouver was for the names along the Inside Passage.

The sea itself on which we are sailing is rightly named after Vitus Bering, the Danish sailor in Russian employ who spent the greater part of his life endeavouring amidst the utmost difficulties to carry out Peter the Great's instructions and determine the eastern bounds of the Asiatic continent. Bering passed through the straits that bear his name in 1728, in heavy weather, but did not know that they were straits, and never saw the American continent until his third voyage in 1741, when he saw the coast in the neighbourhood of Mt. St: Elias. The delimitation of Bering's Straits and the determination of the closest approximation of the two continents was made by Captain Cook in 1778, who vindicated the accuracy of Bering's observations, and with characteristic greatness set Bering's name on the narrow passage between the continents which he had unwittingly passed through fifty years before.

Norton Sound was named by Cook for Sir Fletcher Norton, speaker of the English House of Commons, afterwards Lord Grantley, a lawyer-politician of the factious times of George III, who was known amongst his opponents as Sir Bull-Face Doublefee, of whom Horace Walpole says that he "rose from obscure infamy to infamous fame"; but Horace Walpole was something of a politician himself and could be very spiteful. Cook gave the name because his officer who made the detailed examination of the sound was a near relative of Norton's. One could wish that Cook had honoured the lieutenant himself as Vancouver honoured Puget, instead of his distinguished kinsman, in which case this would have been King's Sound.

Twenty miles or so beyond Point Romanoff we reach "the canal," the mouth of which is marked by a beacon, leading by a winding course unto St. Michael's Bay. This natural watercourse, on the improvement of which the government spent a good deal of money, affords a safe and easy passage for small craft, and avoids the worst part of the sea passage to St. Michael, but it is not used by steamboats because of its narrowness. "We don't need it when it's smooth and we can't use it when it's rough," a captain replied to my inquiry. It is this canal that makes the island of St. Michael.

The flat-bottomed river-boats are sometimes very roughly handled on Bering Sea. They will not issue out of the mouth of the river if there be much wind at the time, but storms spring up suddenly in these parts, and the river boats are light and frail and top-heavy, and get severe pounding occasionally. There is a powerful tugboat, however, kept always in readiness to go to the assistance of a steamboat. Either inside or outside of Stuart Island (another of Cook's names) we pass to St. Michael's Island, a barren, treeless, volcanic land covered with tundra, and partly around the island to its port.

Ocean-going vessels cannot put into the port of St. Michael, but must anchor a mile or so off shore. Barges are then towed out to them and the cargo discharged, and the barges are towed back to be picked up and pushed ahead by the river-steamboats; all of which can only be done in calm weather. The place is evidently, therefore, not a convenient port, but it is the best there is in all these parts, and it serves.

When the White Pass and Yukon Company bought out the Northern Navigation Company (which was the navigating end of the Northern Commercial Company) in 1914, and thus secured the monopoly of the whole river from its head to its mouth, its policy was to send all possible traffic by the upper route; and some of its high officials announced that they would "wipe St. Michael off the map." But they found that the railroad could not compete against their own water-borne tonnage, and that St. Michael was indispensable to any economical handling of the Alaskan freight problem. It is still on the map at the old place, with all its old drawbacks.

A government railway operated without regard to profit and loss might, it is true, lay down at some point of the interior, on navigable water, all freights required, at a rate water-borne traffic could not meet. There would still remain the need of distribution, for which the river traffic of a fleet of steamboats would be necessary, but St. Michael would be of very little importance for a while. Sooner or later, however, the maintenance of such a railway at the public cost would become too irksome a burden, and the road would be leased or put upon a commercial basis. The moment that was done the river fleet would go to the sea instead of to the railroad for its cargoes, and St. Michael would be "on the map" again.

When the Russian American Company was under the able and high-minded administration of Baron von Wrangell, Michael Tebenkoff was sent to establish a

post on Norton Sound, and in 1833 he built Redoubt St. Michael, putting it under the protection, one surmises, of his patron archangel.

St. Michael was thus the second Russian post on Bering Sea, for Nushagak, in Bristol Bay, had been established in 1818 and has a history of upward of eighty years.

Some of the old Russian log buildings still stand; a little octagonal blockhouse, or bastion, on a point of rock, with diminutive, rusty cannon, arousing the interest of all visitors. There were occasions, so the tradition runs, when the fort was needed and the "six-pounders" were effective. Life at the place was slow and lazy, one judges, from the references of those who touched there, the factors or agents despotic and often brutal, and the Russian workmen, convicts shipped hither instead of to Siberia, were of a class who could be controlled in no other way. Master and men alike were grossly addicted to drunkenness whenever the necessary liquor was obtainable. It is rather amusing to read the mutual accusations of the Russian American Company against the Hudson's Bay Company, and the Hudson's Bay Company against the Russian American Company, of selling liquor to natives, when neither seems to have had any scruples on that head whatever. And when Dall was finally leaving St. Michael, when the sway of both companies was terminated and the territory of Alaska had been transferred to the government of the United States, he saw a small schooner lying in the bay, and writes as follows: "To the eastward a bidarra was pulling for the

canal, and rather seemed to avoid us. Taking the glasses, I made out one white man in it and the round sides of two barrels rose conspicuously above the gunwale. I felt sick as I sat down, knowing the cargo must consist of rum and seeing already the beginning of evils whose future growth none could estimate. The vessel in the bay was principally loaded with liquor, which had in some mysterious way eluded the vigilance of the United States officials at Sitka."

How fully and sadly Dall's apprehensions have been justified all those familiar with native conditions along the Yukon know. Vigilance is still mysteriously eluded. The post at St. Michael was maintained by the Alaskan Commercial Company after the transfer for thirty years, but there was no increase in its size, and there seems to have been actual decrease in business activity under American rule. De Long, who visited it in the *Jeannette*, in 1879, at the beginning of the unfortunate voyage of arctic exploration from which he never returned, writes to his wife, "This is a miserable place. There are exactly four white men here and not one white woman," and his sketch of the buildings shows that they remained as they were during the Russian occupation. De Long did, however, pass a vessel at Unalaska carrying to San Francisco one hundred thousand sealskins for the Alaska Commercial Company from the Pribilof Islands, valued at a million dollars, so that we need not commiserate the company too much.

The same event that built the great plant at Andreafsky brought about a corresponding and even greater

THE OLD RUSSIAN BLOCKHOUSE AT ST. MICHAEL.

development here—the Klondike stampede. At a stroke the desolate coast of Bering Sea became a highway of the nations. The available shipping of the Pacific coast was soon exhausted and ships from the Atlantic were sent round the Horn. The quays of every port on the Pacific coast were ahum with Alaskan business. Once started for the north, the tide of traffic divided into two streams, and one took the "inside passage" for Skagway, and the other took the "outside passage" for St. Michael. All the heavy merchandise, all the stocks of goods for trading, as well as many of the individual venturers went by way of St. Michael. The shipyards of the Pacific coast were crowded with orders; the Morans at Seattle started building a fleet of river-boats, some of which went up under their own power, and others were tugged up to the port of the Yukon.

At St. Michael itself the Alaska Commercial Company was not slow to realise the good fortune which had thrown all this business into its lap. Shipyards were laid out, machine-shops were installed, and rapid building of river-craft was begun; stores and warehouses and dwellings and a hotel were built.

Other companies were organised — the Alaska Exploration Company, the Alaska Development Company, the Seattle-Yukon Transportation Company, and I know not how many more; but the only one that survived and for years maintained a rivalry with the original Alaska Company in river-steamboats and in trading-posts was a Chicago concern, the North American Trading and Transportation Company. There, across the

bay of St. Michael, was its establishment—a town by itself, with hotel and machine-shops and stores and warehouses and all the usual accessories. To-day that great plant across the bay is completely shut up and deserted, and much of the plant on this side is disused.

And here and over there alike lie the abandoned steamboats of the respective "boneyards." There is the *Isom*, the largest and finest boat that ever floated on the Yukon River—far too large and expensive she proved—and a number of other vessels; and here is the *Hannah*, one of three sister packets that plied to Dawson and back so long as it was profitable to do so, and several more. I have not counted them lately, but there were eight or nine a few years ago. It does not follow that a boat on the beach is a boat that is abandoned, of course; all the boats are pulled out every winter, but year by year less are launched in the summer, and every year that a boat lies on the shore makes it less likely it will ever displace water again.

The army post at St. Michael—Fort Liscum—adds to the business and the attractiveness of the port, but it is perhaps the least desirable place of residence of all the Alaskan posts. A wet summer, with mosquitoes that breed in the soaking tundra by millions, and a stormy winter, with prevailing high winds in place of the "strong cold" of the interior, and no trees to break their force, such are the usual seasons on this barren coast. Plank sidewalks line the streets, extend across the tundra to the army post, and stretch up and down and to and fro about the compound, but where the plank

sidewalks end, the summer walking ends in general. To step off them is to step ankle-deep in the wet moss.

I spoke of the coastwise Eskimos in high terms, and we are now in their territory. The visitor will see them on the streets, or leaning on the counters of the stores, or beaching or launching their boats on the water-front, clad in dirty drill parkies, or in fur parkies from which most of the hair is rubbed off, and shod in mukluks; and their handiwork in the shape of carved walrus ivories and baskets and fur boots he will see exposed for sale in every place where anything at all is sold. Should he possess the wild desire to purchase ivory cribbage-boards which most visitors display, there is probably no other place on earth—unless it be Nome across the Sound—where there is such a variety to choose from.

I do not know that I would take the Eskimos who frequent St. Michael and Nome, some of whom have been infected with the white man's vices, as representatives of their race. Natives of any kind who hang around a white man's town are not usually the best specimens of the stamina and virtue of primitive men. I would go to Unalaklik, sixty miles or so along the shore of Norton Sound, the salt-water end of the Kaltag portage, and there I think any one who has carefully observed the Indians and Eskimos all down the Yukon would find a people superior in many ways to any he has met. Even in the summer camps around St. Michael and Nome the visitor is struck with the industry which these people display. Every inmate of a tent will be at work, the father carving a piece of ivory or wood, the

mother making mukluks, or fur boots, a large girl beating out and twisting caribou sinew into the incomparable strong thread with which the furs and the boots are sewn, and that I wish every tailor in the United States were compelled to use for sewing buttons on with; even the children will be whittling bows and arrows, the whole family occupied in some productive way. I have been struck by this admirable trait wherever I have seen these people. And there is always a smile for the visitor; they are a light-hearted, good-humoured people, easily amused and thoroughly enjoying a very simple jest; far from being "the shuddering tenants of the frigid zone" that Goldsmith imagined them—winter or summer.

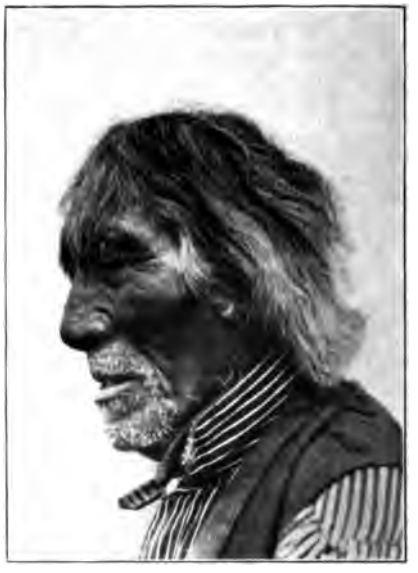
The average Eskimo is undersized compared with the average white man, but they are by no means the squat, diminutive folk they are commonly supposed, and individuals of full stature are not rare amongst them. They are well-made and often graceful in physique, with small hands and feet. The nose is generally rather flat, but in some is well bridged and shapely, and the mouth, while commonly large, is in youth so well filled with white, gleaming teeth, so easily revealed in an attractive smile, that its size is not conspicuous. I have seen individuals that I think would be called handsome by any standard.

These Eskimos are essentially navigators; they are as aquatic as ducks; the centaur was not a more intimate union between a man and a horse than the Eskimo is between a man and a boat; not many of them, I think,

An old Eskimo woman at the Allakaket

A distinct Indian type.

Chageluk Slough type.



An old Indian at Stephen's Village.

NATIVE TYPES.

can swim, yet they are true amphibia, as much at home on water as on land. With nothing but a thin integument between them and death from drowning, they venture far out from land and pursue and kill the seal and even the whale on the ice-encumbered waters. It is admirable to see men mastering such a savage environment, wringing a subsistence from such an inhospitable land, such treacherous and perilous seas; with nothing save what their hands have made from the meagre material those hands could find around them, asserting and maintaining the supremacy of man. It has always seemed to me that human nature takes a new dignity from the life of the Eskimos. Naked in the arctic regions, man still rises superior to his environment, still adapts himself to it or constrains it to his needs.

Nor is the kyak, or even the oomiak the extent of Eskimo boat-building to-day. At Unalaklik they construct excellent schooners and prove themselves first-class shipwrights.

Greatly reduced in numbers as they have been by the causes that are almost invariably set in motion when the white man makes acquaintance with a primitive people (a paraphrase which my readers will have no trouble in reducing to its lowest terms), there is reason to take hope that the diminution is checked in general and that in places the balance is turning the other way. I have allowed myself perfect frankness in speaking of the government's neglect of the Yukon Indians; let me be equally frank to say that the introduction of reindeer amongst the Eskimos of the coast has been a great relief

and assistance to these people; yet I will add that I doubt if Congress would ever have appropriated the initial sum requisite for the purchase and importation of the reindeer had it been intended, in the first instance, for the benefit of the Eskimos. It was the plight of the white men in Dawson in the winter of 1898 that set on foot the impracticable and foolish plan of sending in relief by reindeer, and the abandonment of the plan left the government with the reindeer on its hands, as the man in song was left with the elephant on his hands; then Doctor Sheldon Jackson saw his chance and stepped in, and the reindeer were secured for the Eskimos.

They are a people that any nation may be glad to have fringing the inhospitable waste places of its arctic coast, living, as I hold it true in the main of the Yukon Indians also, where no one else will live; a picturesque and interesting and harmless people with a place of their own amongst the races of mankind, and a right they have bravely won to exist on the face of the earth.

PART II

CHAPTER VIII

THE PORCUPINE AND THE CHANDALAR

The Porcupine River

The Porcupine is the largest tributary which the Yukon receives within the region of the Flats, and one of its most considerable in general. By its affluent the Old Crow it brings down the most northerly water which the Yukon receives, and is thus earlier in closing and later in opening than the great river itself. Its running ice terminates the navigation of the Yukon in the autumn and delays it in the early summer, so that "Is the Porcupine throwing ice?" is an important question late and soon in the season.

The Porcupine River was known to white men before the middle and upper Yukon, and, as has been mentioned before, was the highway by which the middle river was reached. John Bell, chief factor of the Hudson's Bay Company, descended a river tributary to the Porcupine that now bears his name in 1842, and in 1844 descended the Porcupine to its mouth. He was beyond doubt the first white man to see the Porcupine River, and the first white man to see the Yukon above Nulato, though I cannot find that he did more than catch sight of the latter river at the confluence.

I can summon readily before my eyes the large map

of North America which was in the atlas at my school. On it the Porcupine River was laid down to its junction with the Yukon (from Bell's or Murray's reports as I now judge), but the latter river was drawn thereafter flowing far to the northwest to a mouth in the Arctic Ocean east of Point Barrow, marked "Colville or Youcon," and I have before me at this moment, in one of the "Franklin search" books of the sixties, a map in which that mouth is so designated.

What made the chief impression upon my young mind in that map of the school atlas was the great blank space containing three names only: "La Pierre's House," "Rampart House," and "Fort Youcon" (three posts of the Hudson's Bay Company), and what strikes me as most interesting to-day is that the same space holds only those three names. La Pierre's House is quite abandoned this long while, and the company is gone from all of them, but those three names still stand alone across ten degrees of longitude as they stood fifty years ago. The visitor is come to the waste places of the earth so far as the works of man are concerned.

It was in the early summer of 1910 that the *Pelican* made her first voyage up the Porcupine. She was brave in the new paint, without and within, of her spring overhauling, her white sides gleaming in the perpetual sunshine as she ploughed the sparkling water; and her engines running with that purring, sewing-machine sound that betokens recent tuning-up of sparking levers and exhaust-valves. Her tanks full of gasolene, her lockers full of grub, her cushions recovered, her curtains washed,

her mosquito-bars carefully repaired, some new books on her little library shelf, and some new aluminum utensils in her galley, when she took the bishop aboard and ran his purple pennant up the flagstaff that surmounts her cabin, she felt herself not unfit episcopal equipage for Arctic waters. She cherishes a little store of napery, china, and plate, with which her bare board is covered and her graniteware and tin are replaced when she carries distinguished passengers.

A craft, in which one takes personal pride, is, I suppose, always a source of personal expense. There is this little device and that little convenience attractively set forth in the pages of motor-boat periodicals, or the catalogue of dealers' "accessories" (a word that covers a multitude of sins); there is continually swelling and soaring an ambition for more efficient and less troublesome performance, that grows by what it feeds upon and takes new flight with every new installation; and when the limits of an appropriation that covers little more than the gasolene supply are long overpassed, the master of such a craft finds himself still spending.

The reproach of the *Pelican* is that with eight feet of beam she is only thirty-two feet long instead of forty; and that is not the fault of the builders, who indeed pleaded for the greater length, but of the White Pass Railway Company whose flat cars are only thirty-two feet long and who would not guarantee her safe delivery over their tortuous mountain road if she exceeded that length—of that company, and of those who deemed it necessary to send her in by Skagway and the upper river

instead of by St. Michael and the lower. She would be a faster and a handier as well as a much more convenient boat did her length bear juster proportion to her beam.

But such as she is she has been of long and useful and comfortable service. With caches of gasolene and lubricating oil at half a dozen places along the river, and a tank capacity for a week's cruising, she gives a range of travel quite out of the reach of scheduled steamboats, and one sometimes exults at the unconstrained mobility she permits. The Tanana is my wash-pot, over the Koyukuk will I cast out my shoe, upon the Iditarod will I triumph! I am sometimes tempted to vaunt, in vainglorious moments at the opening of the season, when the fever of the Arctic spring stirs the blood and the sweet sound of lapping water once more delights the ear and the great fleecy clouds of summer begin again to float in the blue sky. Where else do waterways open such vast country to travel? where else could one be so footloose and free?

Such moments have their charm—and their peril. They are almost invariably followed by mishap. Should I be steering when I take such flights, at just about that time the fly-wheel right behind me will very likely begin deluging the engine-room with water from the bilge, and the shower must be endured until a landing can be made. I know nothing better suited to dampen the ardour of self-satisfaction than a protracted shower-bath of bilge-water. Or, lost in distant prospects of waterways I would traverse, I find myself taking the boat where she has no present water to float in, and the labouring of the

engine arouses me from my reverie perhaps just in time, perhaps too late, to avoid grounding.

I have spoken of her spick-and-span condition at the opening of the summer. Alas! for her paint and her finery when she has cruised a few weeks in these dirty waters, tying up to mud-banks in wet weather and submitting to booted feet that bring the sand and the muck with them; when she has been aground a time or two and has been sparred and pried off with scant regard for her gleaming white sides!—she soon looks as rusty and as soiled as though she had not been repainted since she was built.

But just now she is in good fettle, fresh from the ways, with a clean river to navigate; and we hope to bring her back from the Rampart House for her down-Yukon voyage, looking little worse than she does now.

We drop down a mile or so from Fort Yukon to the entrance of a little crooked slough that does no more than afford passage, and so slip into the Porcupine River and turn our bows up that stream. Clustered around the mouths of the Porcupine are encampments of the Fort Yukon folk on all sides, ready for the run of salmon that any day may bring now, and here and there fish-wheels are already revolving and creaking.

Within twenty-five miles we pass the mouth of the Big Black River coming in on our right, which has already united with the Little Black a few miles away, and so soon as we have passed it are conscious of a diminution in the water we are navigating. The Black River is an important stream, navigable for more than

two hundred miles, and it has two Indian villages situated upon it, at one of which (one hundred miles up) a white trader maintains a store. The season has been dry, as the early summer often is in this region, and the river is low, and the heat of these first days of July is great. With the failure of a little breeze and the overcasting of the sky, the weather grows oppressively sultry and a swarm of horse-flies, or moose-flies as they are called in these parts, makes appearance—large venomous insects that bite a piece out of one's flesh when they alight.

It is a curious coincidence that we have a popular magazine aboard with one of those scolding, oracular articles which such magazines affect, by some eminent or nearly-eminent scientist (much heralded and belauded in a prefatory italicised note) on the subject of Flies. Flies are the chief contaminators of food and drink, the chief disseminators of infectious disease, in short, the chief enemies of the human race. He does not say that their god Beelzebub is the devil himself instead of some lesser fiend, because he has of course gone far beyond devils, but he is most severe and resolute in his denunciation of flies, and almost as severe and resolute against those whose indifference tolerates them. So long as he confines himself to generalities he is well enough of his kind and succeeds in lashing himself into a fine scientific fury. Displaying no indifferent toleration ourselves, but "swatting" right and left until the floor of the cabin is gradually covered with dead, we are disposed if not to agree with him at least not to make issue with him.

But presently descending just as dogmatically to details, and roaring against the negligence of grooms and hostlers, he declares roundly that horse-flies can breed in nothing but horse manure. And here are we annoyed by them almost beyond endurance—and not an horse within an hundred miles! A little while since we saw a bear prowling the bank and the bishop suggests that perhaps they breed in bear manure also.

Fifty or fifty-five miles above Fort Yukon the Sheenjik or Big Salmon is received on the right bank, coming down from the north, where it interlocks with tributaries of the east fork of the Chandalar. The Sheenjik is one of the Porcupine's most important tributaries, and a good deal of fur comes every year out of the country it drains.

The Flats are monotonous whether on the great river or on its branches; we wind around the mud-banks thickly set with spruce and willow, eagerly looking for the first glimpse of the mountains, but all day passes and our horizon of tree tops is still unbroken. Here and there is a native camp, the white of the tent showing pleasantly amidst the sylvan sameness; soon the dull red of the split salmon will add the characteristic touch of summer colour.

The caving banks throw their trees into the stream, now on this side, now on that, sweepers and snags call for watchful steering, the crossings are numerous and ill-defined and one must read water with some readiness and certainty if one is to be sure of always finding water.

For fifteen hours we run without a stop, save touching

the bank once or twice to speak to some Indians, and then tie up for sleep. This is our regular schedule and it allows of continuous journeys without undue fatigue. An hour or so after tying up is spent in attention to the engine and preparation for repose. Immediately upon stopping, while the cylinders are yet hot, a liberal dose of coal-oil is introduced into each of them through the pet-cocks, and the fly-wheel thrown over once or twice. When the boat had completed six seasons' work the engine was overhauled and the pistons were withdrawn from the cylinders for the first time. The complete absence of carbon deposit upon the pistons, which was then disclosed, was due, I think, to this habitual dosing with coal-oil.

Two pneumatic cushions in the cabin afford comfortable beds for half the boat's company; two others, carried deflated, must be blown up each night to accommodate the remainder, and that takes some time and lung power. I have bought pumps—hand-pumps and foot-pumps; they last a few days or a week or two, and then they get out of order or the connecting tube breaks, and they are cast aside in favour of the lungs and the lips. Why is it that devices such as this—and a thousand others of common domestic utility—are so cheaply and poorly made? Take a can-opener as a more common instance, or a "Dover" egg-beater—why is it that they must be so flimsily constructed that they can be sold at retail for ten cents? A can-opener is a tool quite as important nowadays as a chisel; a Dover egg-beater is quite as important as a brace for a wood-drill

and mechanically much more intricate; why should they not be as carefully and solidly constructed? Surely there are enough people who would prefer to pay fifty cents or a dollar once, rather than ten cents a dozen times over, to justify making and selling some of them of tool quality and price, instead of "notion" quality and price. Indeed, is not one of the more important domestic reforms of the day the construction of domestic implements with as much care as the implements of other handicrafts? Would it not be time and money saved and efficiency gained to sweep away the whole "five-and-ten-cent" junk that multiplies in kitchens, and replace it with real tools?

When a man finds that he has to cook, not only for himself but for others, as most men find sooner or later who live and travel in the interior of Alaska, he is quite likely to decide that he will cook as well as possible instead of being a mere "grub-spoiler." If the Duc de Richelieu invented mayonnaise, it cannot be beneath any one's dignity to make it who can procure a reasonably fresh egg; and, in the main, the difference between good cookery and poor cookery is a little time and pains. But whenever a man finds himself under the necessity of cooking he becomes impatient with the unsubstantiality of the available implements.

The cooking on the *Pelican* is done in a little galley furnished with two "Primus" stoves—and it is surprising how much can be accomplished with a Primus stove. This admirable Swedish stove, used by Nansen twenty-five years ago and long employed in the north,

seems only recently to have been discovered in the United States. I saw shop-windows full of them, as in the introduction of some new device, with "demonstrators" making public exposition of their use, in New York and other cities when last I crossed the continent. The cooking is done and the meals are eaten while the boat runs, so that when she ties up there is naught but the attention to the engine and the preparation for the night to occupy our time. The beds are blown up, the blankets extracted from the lockers, the mosquito-curtains set up, our prayers are said, and we turn in for eight hours' sleep; three persons in the cabin and one in the engine-room. The windows of the boat are provided with blinds, but it is hard to darken the cabin in the middle of summer and at the same time provide sufficient air for ventilation.

When the alarm-clock announces the expiration of the eight hours, the boy in the engine-room gets up, piles his bedding and his deflated pneumatic mattress into the cabin, starts his engine and casts loose; and the journey is resumed within ten or fifteen minutes at most. The man sleeping on the floor in the cabin next arises, deflates his mattress, gathers up both beds, and, before doing anything else, starts the Primus stove for a cup of coffee all round. Then, one by one the others arise, toilets are made at the little lavatory, the bedding is stowed in the lockers, and breakfast is taken in hand. If the weather be fine the after-deck affords a pleasant fresh place in the early morning, and when the first meal of the day is ready there is usually appetite for it.

Breakfast eaten, one of us goes forward and relieves the man at the wheel that he may make his toilet and eat, and that is the regular routine on a long cruise.

If the weather be bright and clear we shall come to our first glimpse of the distant mountains within seventeen or eighteen hours of our start, and one's heart is always cheered, winter or summer, at the prospect they afford of emerging from the Flats. In two or three hours more we pass the "Schuman house," one of the very few inhabited cabins we have seen, and here is likely to be an encampment of Indians; and between five and six hours' more travel brings us to John Herbert's house at the entrance to the first ramparts of the Porcupine.

Here it was, or hereabouts, on the first voyage of the *Pelican* that we met with misadventure. The water was low and it was often difficult to judge where lay the channel. Coming to an island that seemed to divide the waters almost equally we went up on the right hand only to find that there was not depth enough to pass. So we dropped down that we might cross over and take the other side. But the boy at the wheel made the crossing too soon, for a bar from the island stretched far below it, and we found ourselves aground, the swift water swinging us broadside on before we could extricate ourselves. It does not take long for gravel to accumulate against the keel of a boat lying in such position, and Arthur lost his head for a moment and endeavoured to dig a way off the bar with the propeller, advancing and reversing in rapid succession, without

much avail, and without considering what he was meanwhile doing to the propeller itself. It was necessary to resort to other measures, to "peel off and get in," and two or three naked men overboard with stout poles managed gradually to pry her into water that would float her—a rather chilly job and rough on the bare feet. It would have been a trivial and, in those days, not at all unusual mishap but for the abuse of the propeller, which was so blunted and battered by the gravel that thereafter we could get no more than five hundred and twenty revolutions out of the engine instead of the six-hundred and twenty at which we had been running—and all the strong water of the ramparts yet to pass through.

Amundsen described John Herbert twelve years ago as "a very fine fellow, six feet high, with dark hair and a full moustache," when he met him on his overland trip from Herschel Island to Eagle to telegraph the news that he had made the northwest passage; and the description fits him yet. He is one of the finest specimens of the race in physique and character and is now the chief of the Indians centring about Fort Yukon. His house on the Porcupine is finely situated with a noble outlook, but is little used nowadays save at times in winter as a trapping-cabin.

Here the river emerges finally from the mountainous region through which it cuts its way for one hundred and twenty-five or one hundred and thirty-five miles to debouch upon the Flats, and as we enter the portals through which it is flowing the banks swell up in bold

bluffs with great detached yellow rocks rising out of the water. The change is most welcome, and the scene most attractive, after the long, tedious grind through the Flats, and with hearts full of pleasant anticipation of the fine scenery of the ramparts, we enter upon the second half of the journey.

Soon after entering the ramparts, however, the bluffs fall away and open country is resumed for a number of miles, though not the open country of the Flats. Through this open country, between the lower and upper ramparts, enters the Coleen River from the north; though why called Coleen, by whom or after whom, I have not been able to discover. It is also called "Sucker River," sometimes spelled "Succour"—a spelling for which I wish I had reason, for then would hang a story to it, whereas "sucker" is simply a fish. By this break in the continuity of the gorge-like formation we are the better prepared for the upper ramparts when they come, as they do presently, and for about fifty miles to the New Rampart House and ten miles or so beyond, present some of the most picturesque river scenery of the north.

It takes limestone and sandstone to make picturesque scenery; to weather away into spires and turrets and fantastic craggy shapes shooting up naked and ragged; to bring the charm of colour with which the upper ramparts abound, yellow ochres and red-browns, stains of copper and iron ore, deep velvety blacks of shale and pure white of lime. I have seen the cañon of the Yellowstone and the Grand Cañon of the Colorado, and I am

not going to compare the ramparts of the Porcupine with them for a moment, so much smaller is the scale. But I do not think that the rocks of the one or the other carry any more vivid colouring.

The upper ramparts of the Porcupine begin at the Howling Dog Rock, where the river is confined by precipitous bluffs that drop sheer into the water. At this rock the tracking of boats up the river must be intermitted and the oars resorted to; the dogs that have been pulling the line or running along the beach accompanying the trackers, must take to the water and swim around the rock, and they precede the plunge by prolonged protest. Just below the rock, on a fine elevated bench, is the attractive site to which the Hudson's Bay Company removed when it was ejected from the newly acquired territory of the United States at Fort Yukon in 1869, thinking that it had passed into British territory; but it was soon found that the new post was also within the Alaskan purchase, and within a year another remove was made twelve miles farther up the river to the Old Rampart House.

There is no sameness about the ramparts of the Porcupine as there is about the ramparts, upper and lower, of the Yukon. Every bend brings some different scene, and while the cañon-like character of the passage is maintained throughout, there is great diversity in shape and colour and arrangement of the masses of rock. Sometimes for a long stretch the wall is perfectly level and almost perpendicular, and the term "rampart" is exactly expressive of its appearance. At the turning of

another bend and a change in the nature of the rock of the containing walls, the scene is altered completely, and every possible irregularity in contour is introduced. Here a needle that would afford entertainment to the most daring rock-climber, rises straight from the water's edge; here a group of jagged white pinnacles issues out of and surmounts a dark-brown bluff; here a rounded verdure-clad shoulder juts out in striking contrast beyond stark yellow rock. The next bend, it may be, is dominated by a mountain mass that towers to a peak still carrying snow, and from it the ridges fall away in successive buttresses and terraced escarpments. Now one bank and now the other claims chief distinction of fantastic masonry. "Quartzites and dolomites" intruding themselves whimsically give splashes of rich and varied colours.

The stream itself is as varied as its ramparts. Here are placid stretches with little current; here are rapids that it taxes the launch to stem; by and by we shall reach water that with her diminished power she can scarce pass through at all, and then the pike-poles are brought to her assistance and she is pushed through the worst of it. The loss of a hundred revolutions per minute is a serious matter. Here are large rocks in midstream over which the water foams and roars. There is a story that an old Indian long ago shattered his canoe on one of these half-submerged rocks in midstream, and, being unable to swim, stayed there and starved to death, his bones being found on it in the fall. Here are beautiful little sheltered bays with white

sand beaches right beside the rapids, a sharp line of eddy dividing the rushing water from the still. In one such we tie up for the night, a brawling stream coming out of a cleft in the mountains just opposite and singing us to sleep.

Ninety miles or so above our entrance of the ramparts we come to the site of the Old Rampart House, occupied by the Hudson's Bay Company in full confidence that they were by now in British territory, from 1869 to 1889. In this latter year comes John Henry Turner of the Coast and Geodetic Survey (the man for whom so many places are named in Alaska) and sets up his instruments and determines the longitude, by which determination the Old Rampart House is still some thirty-five miles, by the windings of the river, within the territory of the United States; and so the company moves its post once more and establishes the New Rampart House.

Upon the site of the old post (of which no vestige remains but a graveyard) we find a summer encampment of natives, from the village of ten or twelve cabins on the opposite bank where a mountain torrent comes in through a gap in the bluffs, and landing a while we climb up to the knoll on which the graveyard is placed. The little plot is rudely but substantially fenced, for it is still the burial-place of this Indian community, and amidst unnamed Indian graves are here and there decayed headboards upon which may be traced the names of "Hudson's Bay Company's servants"; and one, which we are seeking, bears the half-obliterated name of the Reverend Vincent Sim, who died here in 1885. This is

IN THE UPPER RAMPARTS.

the man of whose work at Tanana Lieutenant Allen speaks so warmly. Leaving Tanana in 1884, he returned hither nervous and ill, partly the result, it is said, of the persecution of a Tanana medicine-man who kept a drum incessantly beating in the neighbourhood of Sim's tent whenever he knew that Sim was trying to sleep, so that labouring all day in his teaching, he was tormented all night for weeks on end. Hearing of his condition the missionary from Fort McPherson came hither to nurse him, and as he grew worse and fell into a general decline, promised to take him outside by way of the Yukon (because the Riel rebellion was disturbing travel in the northwest provinces) as soon as water ran again. But on the very day that the ice broke and the water ran on the Porcupine River (May 25) Sim died.

There is something very noble to my eyes in the life and death of a man such as this. Allen found a child to whom he had taught the alphabet at the headwaters of the Tanana River, heard praise of his self-denying labour at the mouth thereof; here at the Rampart House the story goes that he was teaching even when he was dying. Thirty-odd years ago a white man in these parts had to live as the Indians live, travel as they travel, eat their food; and nothing, it seems to me, but the pure flame of disinterested and consecrated devotion could furnish the impulse and momentum for such a life. Who can tell how wide its influence has stretched?—what part in the melioration of savage ferocity such as Alexander Murray describes at Fort Yukon (not to go to any ecclesiastical source) should justly be attributed

thereunto?—so that if these people be called savages to-day, they must be called gentle savages to whom deeds of violence are almost unknown. I think that mouldering grave at the Old Rampart House is more honourable and more enviable than nine-tenths of all the mortuary monuments upon which sculptors have lavished skill, more honourable and more enviable than nine-tenths that Westminster Abbey contains. Let it be remembered to the honour of the Church of England that she had such sons and sent them into the wilderness long ago; upon whose labours we of the American church have tardily entered, in these more comfortable times, to reap, in some measure, the fruit. Travelling the Porcupine in the *Pelican* is a very different matter from travelling it in a birch-bark canoe.

The thirty or thirty-five miles between the Old Rampart House and the New includes the best of the rampart scenery and the swiftest of its water. The run takes us ten hours, which would be reduced probably by a couple of hours had we our full speed. The gorge narrows and deepens, and grows, I think, somewhat more sombre in colouring, but the crags and cliffs even more impressive in form, until immediately after passing a curious bright-yellow-topped mountain on our right, we swing to our left, the ramparts widen out, and we are in sight of the New Rampart House. Here in a basin in the river-bed, surrounded on all sides by rugged hills or bluffs about five hundred feet high, the river swinging around both sides of the basin, with a wide dreary waste of sand-bar in the middle, is the end of our present jour-

ney. Much as a city street curves out into a circus with a grass-plot or a monument in the centre and then resumes its proper narrowness, does the Porcupine River open out into this basin and then contract to its gorge-like form again.

Very picturesquely the new trading buildings of the Rampart House rise from their high steep bench. A gully from the mountains cleaves this bench and on the other side thereof stand the unfinished church and the native cabins. And that red flag?—Campbell's "meteor flag" seems out here in the wilderness its happiest description as it flaunts its rich deep colour amidst the greys and greens and browns—that unaccustomed flag flying from two flagstaffs?—it is the flag of England, for we have at length reached indubitable British territory. But by how much we have reached it is very interesting to notice. While the place is in full sight and we are speeding towards it we are yet in Alaska. You see that last cabin on the left?—ten feet therefrom stands the bronze monument, one side of which is inscribed "Canada" and the other "Alaska." John Henry Turner put the boundary-line a quarter of a mile or so to the westward, but this is the conclusive and ultimate delimitation, the careful work of an international scientific commission. The line of the 141st meridian is now run with minute accuracy from the Gulf of Alaska to the Arctic Ocean, and is marked all the way at regular intervals with bronze monuments on concrete bases.

This matter of the longitude of points in the Arctic wilderness was beset with great difficulty. The only

data the Hudson's Bay people had were the determinations made by Sir John Franklin on the MacKenzie in 1826. In the absence of chronometers, or any telegraphic means of obtaining time, in the absence of any scientific instruments, trying to carry a dead reckoning down rapid rivers, it is no wonder that they were uncertain of their situation.

Nothing could be more careful than Murray's record of his courses all the way from La Pierre's House to Fort Yukon; they occupy page after page of his published "Journal." He mounted a compass in the boat, checked its variation repeatedly as best he could, and riveted his attention upon it during the whole journey; indeed, Murray well knew that he was far within Russian territory, but could only guess how far. Raymond's determination sent the company back, some other determination or just their own misgivings sent them back again, Turner's determination sent them back once more—and the site of their last removal stands but a couple of hundred yards across the boundary to-day.

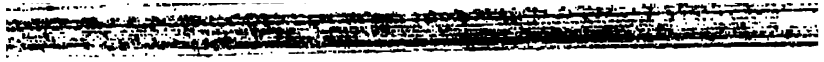
One recalls the controversy about the longitude in the reign of Queen Anne and the outrageous lines of Dean Swift, perhaps the most scurrilous in English literature, beginning:

> "The longitude missed on
> By wicked Will Whiston
> And not better hit on
> By good Master Ditton."

which lines are said to have caused the death of "good Master Ditton." There has certainly been improve-

AT THE ENTRANCE OF THE LOWER RAMPARTS.

AT THE RAMPART HOUSE—ONE FOOT IN ALASKA, ONE FOOT IN CANADA.



ment in taste these two centuries, if in nothing else, as the reader who shall turn up the reference in a complete edition of Swift will readily agree.

The Hudson's Bay Company is gone; the attraction of the Indian to the Yukon by the great impetus which the mining developments on that river gave to trading, coupled with the refusal of the United States Government to permit the company to bring in its goods by way of St. Michael (the actual refusal was a refusal of permission to cut wood for its steamboats) caused the company to withdraw from Yukon waters altogether. I have always thought that it abandoned a good post in pique. After a few lean years the Indians returned and an independent trader has thrived there this long time.

Men may say what they like about the Hudson's Bay Company. It paid low prices for furs and low wages to its servants, but it handled nothing but thoroughly good merchandise, maintaining generation after generation a standard quality; and it managed, despite the low wages, to secure capable and conscientious men and to keep them. It secured the confidence of the natives; its promises were never broken, its rules were rigidly maintained. To this day the natives at Fort Yukon can make no higher compliment to an article of merchandise than to say, "All-e-same Hudson's Bay," and seek to obtain by barter from their more fortunate Canadian kinsfolk (as they regard them in this particular) the blankets and duffle, the scarves and braids which they can no longer purchase directly.

Between our sight of the New Rampart House and our arrival lies the swiftest water we have yet encountered, and the *Pelican* is shorn of the honour of passing proudly through it by the wretched mishap that battered and buckled her propeller. In the midst of it she stands still, her best speed evenly matched by the speed of the water. Edging towards the shoaler part of the stream the pike-poles are resorted to and she is ignominiously poked and shoved through the rapid until slower current is reached and she can make her own way to the bank where the whole population awaits her—conspicuous amongst them the red jacket and yellow-striped trousers of a sergeant of the Northwest Mounted Police.

There is interest even to excitement in reaching this place. It is the first white settlement we have seen in all our two hundred and fifty miles of travel; it is one of the most northerly settlements in all this interior country, if indeed it be not the most northerly. That trail winding up the westerly of the two hills rising behind the place leads right across country, up-hill and down-dale to the shore of the Arctic Ocean, one hundred and fifty or one hundred and sixty miles away as the crow flies, and nigh two hundred, I suppose, as it must be travelled. Up it and along it went the pack-mules carrying the baggage and supplies of the Boundary Commission. I climbed it just a week ago (for I am newly returned to finish this chapter from a voyage on the Porcupine and some of the details here incorporated refer to this latest journey), and pushed on for a mile or so through the thick scrub brush with which the plateau is

covered, the mule-trail well defined though boggy; pushed on as though bound for the Arctic coast and heartily wishing that I were bound for the Arctic coast, as one of my companions on the *Pelican* was.

The hills around are all worth climbing for the different views they afford. Some five miles due south of the Rampart House, cleft by the boundary-line, rises a mountain much above the general level, perhaps to two thousand feet, and from its head on the 8th of June the sun never departed. At midnight when the gorge was wrapped in gloom and clouds covered the upper sky, the mountain top glowed deep crimson; a very stirring and beautiful sight that reminded me of a midnight glow I once saw on the top of Vesuvius. And upon that unfortunate mountain, because of its divided allegiance, has been bestowed the dreadful name of "Can-Alaska"! What Gargantuan prodigiousness our surveyors and mapmakers invite us to! "Cook Inlet" might be described as a large culinary order, but "Can-Alaska" would certainly require "some can."

Amongst the native people of this place is one old woman of the greatest interest. She is, I think, the oldest native of all these parts, and though feeble and decrepit in body, of unusual sprightliness of mind. She remembers the coming of the first white man to the Porcupine River, and that was John Bell in 1842, so that, her memory running back seventy-five years, she must be well past eighty, as I judge, and that is a great age for Indians to attain. Some one, hearing her speak of the first coming of the white man, said "She must

mean McDougal," who started the Porcupine post in 1869. "Oh, no!" she said, when told of it, "that was only a little while ago!" Moreover there is a romantic story attaching to her. It is said that when a young woman she was stolen away from her husband, or from her affianced husband, I could not be sure which, who thereupon renounced the society of his people and lived a hermit's life. He would bring the fruits of his trapping and deposit them on the beach near the store; the trader would take them and in return place such a general supply as they were worth and as he judged the man would need; whereupon the misanthrope of the wilderness would come down in the night again and remove the "outfit" to his lair in the mountains; and that was all his intercourse with mankind for the many years he lived. It is hard to associate this withered and shrivelled creature with the inspiring of such a passion, yet there is even now a gleam in her bleared eyes and a musical intonation in her voice, a readiness of wit and an air of independence and resolution that single her out from old Indian women. I suppose if I say that I count it a privilege to offer her a tribute of tobacco, I shall "provoke in the sinful a smile" as Truthful James used to put it, but indeed these ancients of the wilderness make great appeal to me. One by one they drop off; the contemporaries of the Hudson's Bay advent in these parts are now reckoned two or three only, and this venerable dame is the briskest as well as the oldest of them. I wish we had her at Fort Yukon; it would be interesting to take care of her, to dig into the nethermost

LOOKING DOWN THE RAMPARTS FROM THE RAMPART HOUSE

layers of her memory, and to see how much longer we could keep her alive.

We are not half-way up the navigable Porcupine, though beyond this point the *Pelican* has never been. For ten miles farther the gorge of the river continues in the same direction, with, it is said, even loftier and narrower walls and swifter water; then the bluffs fall away and there is open though rocky country and easy navigation for sixty miles to the mouth of the Old Crow River, coming in from the north and interlocking with the headwaters of the Firth River which flows into the Arctic Ocean at Herschel Island. Beyond that is reputed good water for another one hundred and fifty miles or so, still to the east, until the Bell, also from the north, is received, and some thirty miles up the Bell is La Pierre's House, where the portage to Fort MacPherson is taken —on which journey my guest and companion was bent. To trace the river farther would be to sweep around to the south, and I suppose another two hundred miles would be travelled in this direction ere the Nahoni Lakes, from which the river takes its rise, were reached; but since at the Bell mouth the river ceases to afford highway of travel, ceases to lead anywhither that men would go, its upper courses are little known save to the isolated bands of Indians who inhabit them and find their most convenient trading-place at Dawson or Fortymile. It is very curious, however, as looking back to the intertribal hostilities that preceded the coming of the white man to the Yukon, that the Indians from Eagle to Circle still dread the people of the upper Por-

cupine, and not only children but grown people are frightened if told "the Nahonis are coming." A white man, building a cabin near Charley Creek this year (1917), was induced to build it on the opposite side of the Yukon because of his native wife's dread of the Nahonis.

If the voyage up the Porcupine be one of the most interesting that the waterways of Alaska afford, the voyage down, particularly through the ramparts, is full of the keen excitement that a spice of danger, and the constant vigilance necessary to evade it, induce. In places the current is so rapid, the channel so narrow, the shoals so near, the turns so sharp, that care and skill are required and a very quick hand and eye to guide the boat safely through. There is no time to change one's mind or to correct a mistake. Sometimes one must steer straight for a rock, impact with which would stave in the boat, and, as it seems, upon the very instant before striking it, the wheel must be thrown hard over that the boat may make an almost quarter-circle turn and still keep in the deep water. Sometimes, as at Martin's Island between the upper and lower ramparts, the water sweeps very swiftly over wide gravel shallows with a narrow channel in the midst, hard to discern and taking short, sharp turns. The channel had little more depth than enough to float us and our speed had therefore to be cut down till it scarce sufficed for quick steerageway; and this, I think, at low water is one of the worst places in the whole river.

It would, of course, be easy to exaggerate the diffi-

culties and dangers of this navigation; to those properly equipped and accustomed to swift water it is not a bad river. There is a fascination about such travel, however, that keeps one close by the wheel, though I know it is quite safe in Walter's hand, far safer than it would be in my own. We brought the boat down on this last trip, in one run from the New Rampart House to Fort Yukon, in about twenty hours, and I think he was at the wheel for fifteen or sixteen of them, leaving it to me only to eat or to attend to the engine, and I was always glad when he returned.

Both going and returning the heavy ice of the break-up lay piled upon the banks and sand-bars, gradually dissolving in the sun, for the high water of the break-up of 1917 was checked by sharp unseasonable cold weather and fell too rapidly to bear away its burden.

From the latter half of the journey the pleasure was largely removed by an exceeding high up-river wind that gathered the sand from the bars and flung it all over us and through us, and sometimes carried such clouds of dust as to obscure the steering view. The Porcupine is not wide enough to get up much of a sea; in the lower Yukon we should have had to seek shelter from such a wind; but even the Porcupine grows very choppy when wind is beating against current.

The Chandalar River

The Chandalar River takes its name from the term used by the Hudson's Bay Company's servants at Fort Yukon to describe one of the numerous tribes of Indians

who visited the post. Because these Indians resembled the children of Jonadab the son of Rechab, more closely than the generality of Indians, in having no permanent villages but living in tents and wandering widely, they were known as "Gens de large," and the river which they chiefly frequented and down which they came on their journeys to Fort Yukon was called "Gens de Large" River. It is so pronounced to-day by the older Indians of the place when they use its white man's name. It became corrupted into Chandalar, and even found its way into the Geographic Dictionary of Alaska as "Chandler," with the purely fictitious statement that it was "said to be so named from John Chandler, a factor of the Hudson's Bay Company"—fictitious, that is, on the part of whoever said it—one of the few blunders which that very valuable book contains. The Indian name for the river, or for that part of it below the mountains is Tatreenjik.

The Chandalar shares with the Koyukuk the drainage of the southern slopes of the Endicott range, the one flowing southeast to a confluence with the Yukon about twenty-five miles below Fort Yukon, the other flowing southwest with much longer course to a confluence five hundred miles farther down-stream, a little above Nulato. The many streams that flow into the Yukon between these rivers do none of them reach back to the mountains of the Arctic divide, but take their rise in the uplands of the intervening country. The Chandalar, therefore, in two hundred miles of its course, has almost as much fall as the Koyukuk in six hundred, and is for

the most part a swift, unnavigable river. It has been navigated with great difficulty by steamboats for about one hundred miles, but this traffic has ceased for the last eight years and it is now ascended by poling-boats only.

A few miles before its discharge into the Yukon the Chandalar receives on its left bank the Christian River, so called from the chief of the Chandalar Indians. Christian is an Indian held in great respect alike by whites and natives of these parts, who exercises much more authority than most Alaskan chiefs do nowadays. This stream of considerable length drains the swampy lake country between the East Fork of the Chandalar and western tributaries of the Porcupine.

Some sixty miles above the mouth of the Chandalar is a native village of about forty-five souls known as the Chandalar Village, and it is at this point that the winter trail from Fort Yukon strikes the river.

For another thirty or forty miles the river is still passing through the Yukon Flats though with the hills appearing on either hand and promising speedy escape. Like all the tributaries of the north bank of the Yukon in the Flats, the Chandalar enters that dreary plain through a "gap" in the mountains, and the transition is abrupt and striking. There is, indeed, a gradual and not inconsiderable slope from the mountain rim to the centre of the plain; indeed the level appearance of the Flats is everywhere deceptive, their sides being tilted to their centre and the central line itself (the bed of the Yukon) having slope enough to give rapid flow to its waters, but any point of emergence from this region into

the encircling hills is abrupt, and the traveller in the winter is unaware of the grade he has been ascending.

Just above the rugged rocks and high bluffs that make the Chandalar Gap, the East Fork is received, and by the common consent of the natives and of such white men as have traversed and prospected the country the East Fork of the Chandalar is really the main branch of the river.

But the East Fork of the Chandalar is quite unknown to explorers and map-makers. It has never been visited by any members of the Geological Survey, and the stream on all maps is put in by those vague dotted lines which mean "conjectural course." What is called the "main Chandalar" has been surveyed and mapped, but this large arm which I am confident will prove the longest arm, awaits further appropriations or leisure from more pressing tasks; a condition which all the region from the Chandalar to the boundary-line, the 141st meridian, shares.

Between the East Fork of the Chandalar and the tributaries of the Sheenjik or Big Salmon, which is an affluent of the Porcupine, and just above the headwaters of the Christian River, lies a great lake, the largest I am confident within the whole basin of the Yukon; yet it finds no place upon any map. I have never seen the lake, but it has been described to me, and sketch-maps have been drawn of it by both white men and Indians. Its longest dimension, roughly north and south, is twenty-five miles—a white man well known to me having stated that with excellent snow surface in the spring it

took him considerably over half a day to traverse it with a dog-sled, and its width varies from two to five miles. It is bounded on the west by very high and rugged mountains, by lesser ones on the east, and by swampy flats through which its discharge meanders, on perhaps both north and south, and it is said to be of great depth. I judge its northern shore to lie just south of the 68th parallel, between the 144th and 145th meridian, and it is said by many to drain into both the East Fork of the Chandalar and the Sheenjik, though by others to discharge into the latter only. This lake is known by the Indians as Vun-gi-í-te, or nearly Vungitty, by which name I think it should appear on the maps when maps are made of this region. The few white men who know it usually speak of it as "Christian's Lake" because it is a resort of the chief of that name and his people. While preferring the native name I should not greatly resent the perpetuation of the white man's name, since in this case it would honour a native chief who has been a father to his scattered people. Hither come the Eskimos from the Arctic coast on their winter hunts; and to them repair Christian and his tribe of "Gens-de-Large" for the bartering of the furs of their respective countries; the white fox and the polar bear for the wolf and the wolverene chiefly; with some traffic in ammunition and tools; and the native clergyman at Fort Yukon has more than once taken advantage of this gathering for the evangelisation and instruction through interpreters of a tribe of coast-dwellers, some of whom had once or twice visited the mission at Herschel Island, but

others of whom had never been to that or any other station. I have long intended, and did once plan, a visit to this interesting rendezvous, but the date of its occurrence is uncertain and its season one that usually finds me far afield on my winter journeys.

The lake, like others in Alaska and elsewhere, has by Indian legend a monstrous fish which inhabits its waters and produces storms by the thrashing of its tail—a fancy which the sudden squalls of mountain lakes give easy and natural rise to. But the lake is reported actually to hide within its depths trout of a very unusual size.

The East Fork of the Chandalar has one of those wilderness tragedies associated with it that are not uncommon in Alaska, though this one is marked by certain features that give it special interest.

Two men who had been mining in the region, an old-timer, Geraghty, and a newcomer, Clarke, set out in the early winter of 1908 on a prospecting trip to a creek away up near the headwaters of the stream. Geraghty had been there before and had found prospects that attracted him, but he was noted amongst his acquaintance for the lack of that sense of locality which is so valuable a quality in his occupation. The men had a dog-team and a considerable supply of staple "grub."

When a year passed without word of them no special concern was felt by their acquaintance because it was thought they might have passed over the mountains and down the Arctic slope and replenished their supplies at

Flaxman Island, where the trader-explorer Leffingwell had a post for a few years, though this was not within their expressed purpose; but when another winter passed with no word or sign, fears for their fate were aroused.

It has been noticed elsewhere that there is no public authority in Alaska charged with the search for missing men, nor any funds out of which the expenses of such search may be defrayed.

In default thereof, a volunteer of the Chandalar miners set out in the spring of 1910 to follow the course the two prospectors had intended, and to discover if possible what had happened to them. The narrative of this man, Jack Cornell, which I took down upon his return from a five months' search, gave a vivid picture of the difficulties of travel in the northern wilderness in the summer-time, as well as affording one more illustration of its dangers in the winter. Incidentally it is a fine illustration of the spirit of the best of our Alaskan prospectors. From the 5th of April to the 8th of September he saw no living soul and subsisted entirely upon game. Having knowledge of the country, he made his way towards a pass in the mountains two hundred and fifty miles above the mouth of the East Fork, through which he was confident these men must have gone had they visited the Arctic coast, and there he found evidence of their passage both going and coming, and judged therefrom that they had visited the coast and returned to the East Fork country. Old camp sites left signs to his experienced eye that white men and not Indians had lodged, and there had been no other white men in that

country for years; a series of camp sites too close together for the sojourns of successive days spoke of the double journey. I shall not pretend to describe the minute details of the tra king of their returning journey that followed, for only by minute details could it be traced at all after the snow upon which it took place had gone, and fresh snow had come and gone again. Those who live long in the wilderness have their powers of observation sharpened to a degree little short of marvellous, though for myself I think I had as soon seek in the water of the Yukon for trace of the passage of the boats of last summer as seek in the wilderness for trace of the passage of a sled two winters ago. Yet there are such traces, and with long experience there comes to the observant an ability to detect them which belongs to what may be called the histology of the trail; the breaking down of brush, the use of the axe, never very long intermitted, the charred embers of old-extinguished fires, in wind-swept rocky places the characteristic mark left on stone by iron runners, the excrement of the dogs, and many others.

By such means Cornell followed the return journey until he came upon the body of one of the men. It lay beside a broken sled and some tattered remnants of tent, in an advanced stage of decay, and in the clothes was a little mildewed calendar book such as prospectors commonly carry, striking out each day as it passes, the name in which identified the corpse as that of Clarke and the cessation of the marks in which gave presumptive evidence of the date of death.

Now this is all that was ever really known of the fate of these two men; yet notice what follows.

Cornell had already spent six months at his own expense in the search, and no government agency could be set in motion for further investigation or even for the decent interment of the remains (which Cornell had scrupulously left as he found them) unless some charge of crime in connection with the death could be made against some one. I do not say that there were not those in the Chandalar who really suspected foul play, but I am quite certain that the Chandalar Indian who was charged with the murder before the commissioner of the precinct would never have been arrested had not the issuing of a warrant for some one's arrest been the necessary preliminary to further inquiry. Murder in the air, and an accused person bound over to the grand jury at Fairbanks, the marshal's office was unlocked, no expense was spared and two special deputies were soon afield. They passed to the Arctic coast and found, as Cornell had deduced, that the lost men had in fact visited the trading-post maintained for a few years at Flaxman Island and had returned—and that was literally all they found. The remains of Clarke were boxed and transported to Fairbanks, where they were carefully examined by a surgeon for any sign of bullet-wound, the flesh being all removed from the bones, without result; and the Chandalar Indian, against whom there was no particle of evidence, was released after six months' confinement in the Fairbanks gaol, when the grand jury ignored the bill against him. What angered me most,

as similar instances have angered me before and since, was that this Indian who was arrested and carried to Fairbanks in the summer, was discharged in the dead of winter, with no provision of clothes or money, to find his way back to his home as best he might, three hundred miles over the trail. There is no law that returns a falsely accused man to his domicile. If he be found guilty and serve a sentence, though it be but a week, he is returned whence he came at the government expense, but if he be innocent he pays this penalty for innocence.

Now, this is a plain statement of a case, all the persons of which were well known to me, in which I was myself a witness before the grand jury as to the whereabouts of the accused at the supposed time of Clarke's death, which illustrates the stupidity and injustice of the legal procedure under which Alaska still languishes.

There is, I think, little doubt that the men fell out and separated, and each starved or froze to death in a very severe winter. No trace of Geraghty has ever been found; there were rumours of an unknown white man taking passage on a whaler at Herschel Island, but they were unconfirmed, and the case passes into the limbo of unsolved disappearances to which Alaska has contributed so many.

But I referred to the matter not only because of its association with the unknown country of the East Fork of the Chandalar, but, as I said, because Cornell's journey illustrated the difficulties of summer travel in the Arctic wilderness. Writing, I am conscious, in the main for those who do not know the country at all, or

who do but float down its rivers in comfortable steamboats, I am glad to give a glimpse occasionally which shall enable them to form some notion of what is involved when a man leaves the river-bank and strikes across country. Here is one incident towards the close of Cornell's journey which I transcribe literally from my diary:

It was the rainiest summer ever I seen, and the mosquitoes was a terror. I had a veil and I honestly believe them mosquitoes eat it up, for it went to pieces all at once. I honestly believe they eat it up they was that thick and that venomous. The only chance to sleep was to travel so long and so hard that I fell asleep as soon as I stopped. And there I'd lay and hit a'raining until I got chilled through and woke up, and off I'd start again. Sometimes I'd build a fire and sometimes it was so wet and I was so tired I didn't build no fire. One night I had a scare I hain't got over yet. There's no one can say I ain't careful with fire-arms and I never had no such thing happen in my life before, and I've handled fire-arms since I was a kid. But I was so plumb tired and wet and done up I reckon I forgot. Anyway when I put my gun down beside a tree it went off and shot a hole clean through my hat. Of course I muster forgot to draw the charge and the gun fell back against the tree and struck the hammer. I'm considerable of a nervous temperature myself, but at first I didn't seem to take no particular notice; the thing sorter dazed me and I didn't think nothing of it; I muster been plumb wore out. But when I lay down to sleep it kinder came over me that I'd had a mighty close call, and that it was just a shave there wasn't another body lying out in these here hills. Pretty soon I got to trembling so I couldn't lay still and then I just plumb broke down and I couldn't sleep at all. When I got up in the morning and kindled a fire to roast two rabbit legs for breakfast, I says to myself "You've been out too long; it ain't good for you to live all alone in the hills this-a way; first thing you know you'll go bug-house." And I made up my mind it'd be the last trip I'd take by myself. It ain't right. But I hain't figured out yet how I come to do it, for I've allus been a very careful man with fire-arms and I've handled 'em all my life. I muster been plumb wore out.

Above the gap the main Chandalar enters the foothill country and it is bluffed on both sides henceforth with high mountains. Eight or ten miles above the gap is the abandoned post of the Northern Commercial Company known as Chandalar Station, with numerous empty cabins clustering around its store-buildings and warehouses, and another eighteen miles or so above is the abandoned or nearly abandoned town of Caro, popularly but erroneously supposed to be named after a certain brand of cane syrup much in use for hot cakes at breakfast; it was named for a lady of Fairbanks.

The Chandalar stampede, which was responsible for the building of the trading-post and the town, took place in the winter of 1906–7 and the following summer. Prospectors from the Koyukuk found gold on tributaries of the Middle Fork, and there was a "rush," first from the Koyukuk diggings and then from the Yukon, and the Commercial Company felt justified in the considerable expense of its establishment here, and in the greater expense proportionately of sending its steamboats to the difficult and precarious supply thereof. But the placers proved disappointing, and extensive further prospecting revealed little ground that was productive. The post was short-lived, the town not much longer; in 1909 the former was abandoned, and the latter was decayed almost to nothing in 1910. Then came a fillip of renewed activity from the discovery of quartz-ledges, and a speculative prospector succeeded in inducing certain people "outside" to provide money for the working thereof. Caro revived, and its talk

changed from "mica-schist contacts" to "intrusive dikes" with much reference to "preglacial conditions." I have formed an opinion that a little geological knowledge is a dangerous thing for a miner. By the influence of the "outs de" people referred to, the Alaskan Road Commission was induced to construct eighty miles of wagon-road over comparatively easy country from the Yukon River to Caro, and "Beaver City" sprang up at its Yukon terminus. The road was entirely justified, I think, and is regarded as a pretty good piece of work; it opens a wide country to easy access winter and summer; but ending at Caro is nowadays ending nowhere. It should be extended to the Koyukuk River, but I suppose the bridging of the main streams involves an expense that the commission shrinks from with its present resources.

By the common judgment of the Chandalar men the money that should have been spent in tunnelling and uncovering the ledges in order that the real extent and value of the quartz might be known was wasted in the costly transportation of stamp-mills while as yet there was nothing to stamp. The old story was repeated; for a while further subsidies were procured with increasing difficulty, but at length the supply failed and the operations ceased. The well-known politician who was ousted from the governorship of New York State by impeachment, ostensibly for what he had done, but really, as it was generally believed, for what he had refused to do, is said to have borne the burden of the chief expenditures on Chandalar Quartz. Pieces of heavy

machinery that I suppose he has more title to than any one else lie scattered along that government trail all the way from Beaver to Caro.

The collapse of Chandalar Quartz left the river in much the condition of activity in which it exists to-day. There are a few men working claims at the head of Big Creek and on the creeks that issue from the same mountains and fall into the Middle Fork; there is prospecting on Trail Creek, which is tributary to the West Fork, but I do not think there are twenty-five white men on the whole river, and that will include a few trappers.

There may yet be gold discoveries of moment in this district, which is a difficult and expensive one to prospect. The season is very short high up in the bare mountains where the few remunerative diggings are situated, and water is often very scarce, while the cost of wood for fuel is enormous, so that the ground must be rich to yield any return. I have known seventy-five dollars a cord paid for wood at the head of Big Creek. Indeed the cost of transportation is one of the great hindrances to the working of minerals here, as in so many other parts of Alaska, and to the prospecting for them. The quartz deposits under wiser operations may yet be profitable, though to this day no one really knows much more about them than the outcroppings reveal.

Ten miles or so above Caro the Middle Fork is received, which runs roughly parallel with the main stream, with high mountains between, through the midst of which mountains Big Creek flows to a junction with the main river twenty miles above. Ten miles or so

above the mouth of the Middle Fork the West Fork comes in, a short tributary which heads against the South Fork of the Koyukuk. The main stream is henceforth locally known as the North Fork and after twenty-five miles more of rapid course, in which it receives Big Creek as aforesaid, issues out of a narrow lake eight or nine miles long known as the Chandalar Lake, embosomed in rugged mountains. Indeed, the scenery of the upper Chandalar is in places very bold and picturesque, especially in the neighbourhood of the lake, though I can speak from personal knowledge only of its wintry aspects. Above that lake is another region of extensive flats through which the river is said to wind for fully thirty miles, and beyond that it nears its headwaters in the Endicott Mountains.

CHAPTER IX

THE TANANA RIVER

THE Tanana River is by far the most important of the tributaries of the Yukon. There may be rivalry with another tributary from a geographical point of view, but from a commercial point of view it is more important than the Yukon itself, as regards its output of gold and the business which that output supports. Probably two-thirds of all the white people of the interior of Alaska live adjacent to its banks. Statistics of our white population are indeed skittish things to handle, and generalisations based upon them are likely to be of only immediate accuracy; it is entirely possible that between the writing and the reading of these words some new sensational gold discovery may shift the centre of gravity of the white population a thousand miles at a stroke, as it was shifted for a while by the Iditarod stampede, but, such a contingency aside, the Tanana River will probably continue to be the most important river of the interior. An element of stability lacking anywhere else is undoubtedly introduced by the building of the government railway from the coast to its waters, and unless that railway be extended to the Yukon the Tanana will probably become the main artery of the commerce of all interior Alaska—which, however, is not saying a very great deal at present.

The Tanana River differs from all other tributaries which the Yukon receives within the Territory of Alaska in that its drainage is largely the drainage of glaciers, and this circumstance has consequences which give the river certain marked characteristics. The turbidity of the stream, mentioned once before, is due to it; a turbidity so pronounced at certain seasons as to make the water in the highest degree unsightly and distasteful; the eccentricity of its rapid rise to flood after prolonged hot dry weather is due to it, and so is the relative shortness of its navigable channel compared with the total length of its course.

Nowhere, in that whole length, is it other than a swift stream. Most rivers slacken towards their mouths, but at certain stages when the Yukon is low and the Tanana is high it is swifter in its last ten or twelve miles than it is one hundred miles up, and I have never seen it really slack. The *Pelican* makes any ten miles of the Yukon within its territory faster than it makes the first ten miles of the Tanana.

The entrance to the river presents great difficulties at low water. It has no one mouth nor does it discharge in a delta. For ten miles below what is counted its navigation mouth it flows roughly parallel with the Yukon, their channels being separated by islands, between which their waters commingle. The river is entered round the lower point of the first of these islands, but I suppose its real mouth is around the lower point of the last of them—a long island that stretches six or seven miles below the town of Tanana. The

passage used by the steamboats has a very narrow crooked channel, frequently changing, and is much beset by sand-bars. At low water it is common to see boats trying unsuccessfully for hours to enter the river and they are sometimes on the sand-bars for days at a time.

The region immediately around the confluence of these rivers is noted for violent winds. River courses seem natural wind courses also, and here two of the great air currents of the interior meet and contend. The natives lower down the Yukon call the mountain bluff near the confluence "the place where the wind beast lives." He pays visits to other places but this they consider his permanent home. As we begin our voyage of the Tanana and turn the first bend or two we have evidence of the fierceness with which the wind blows in these parts. High sand-banks on the left limit of the river, our right hand as we go up-stream, have been cut and carved and even bodily removed by it; trees may be seen buried in sand, the tops only emergent.

It is in winter that these wind-storms are particularly fierce and persistent, and before the mail trail was cut through the woods on the right limit of the river, when all travel was on the ice, this was one of the most distressing and difficult sled routes in the country. There is one point of bank which it was sometimes almost impossible to pass in face of the wind; the glare ice, swept and polished, gave the dogs no footing, and many a man has had to thrust his arm through the harness of the leader and crawl on hands and knees, dragging the

dogs with him, to get around it. In other places the ice over a large area is covered with sand blown from the banks, making a surface over which an iron-shod sled may proceed only with the greatest labour. In the summer these winds are often so high that the steamboats with their shallow purchase on the water and their extensive top-hamper, must tie up until they subside.

Some fifteen miles above the mouth Fish Creek is passed, draining a large lake that lies in the lowlands to the left, and here the *Pelican* always stops to fill a keg with clean water.

Tributary creeks are important to the Tanana voyager, since they provide the only usable water for drinking and cooking purposes. Coffee and tea made with Tanana water are undistinguishable, the mud flavour predominating over any other infusion. But the mud has more serious results.

It was this condition of the water that brought the first voyage of the *Pelican* to an abrupt end. Built by a New York establishment chiefly engaged in marine construction and knowing nothing of any river but the Hudson (even, as I sometimes think, refusing to believe that there can be any river that is not a duplicate of the Hudson), she drew the water for cooling her engines directly from under her bottom by a little gear-pump with lignum-vitæ gears—a most beautiful little pump. But the silt of the Tanana not only filled up the whole circulating system of the engine, choking the pipes and the water-jackets, so that constant cleaning thereof was necessary, but gradually cut those beautiful lignum-

vitæ gears all to pieces, so that at last the pump would not lift water at all. Before the engines were practicable for continued use in such a stream, it was necessary to install a settling tank, with several compartments, the water rising by natural flow into the first and passing over the top of it into the next, and then through the finest wire gauze into another, detaining the mud at the bottom of the compartments instead of allowing it to enter into the circulating system; and it was necessary to replace the lignum-vitæ gear-pump by a common plunger-pump, not so easily worn and much more readily repaired, and this was the first of a series of replacements and readjustments ere the boat was suited to the waters in which she works. Notwithstanding all of which, if I were procuring another launch, I would go across the continent to the same house again, for the workmanship of hull and engines is honest and stanch, beyond, I think, the practice of any Western builders; and at the beginning of the *Pelican's* tenth season, when she has already travelled nearly thirty thousand miles on the Yukon and its tributaries, she is almost as good a boat as when she was launched.

Forging ahead against the swift current with no more than five miles an hour to her credit despite skirting of sand-bars and advantage of all slacker water and inside curves, through open timbered country with hills in the distance, on a stream that often has several channels and that will vary from half a mile to a mile between banks, the *Pelican*, towards the end of her first day's run will approach the Coschaket, a native village situ-

ated, as its name implies, at the mouth of the Cosna. A white man's corruption of the name of the village into "Crossjaket" I mention only because I have more than once seen it in official documents.

There has always been a settlement of natives at this place; it is much older than the village of Tanana. Lieutenant Allen, making the pioneer exploration of the Tanana River in 1885, met a considerable band of them, and prints a portrait of their chief, Ivan (who must have had that name from still earlier association with the Russians). Ivan is still the Coschaket chief, a man of much dignity and influence. Allen's description of these natives is interesting enough to quote, as giving a vivid impression of the Tanana Indians more than thirty years ago.

"Their appearance in camp," he says, "at the very edge of the water, with thirty-five to forty birch canoes of all sizes fastened to the shore, the abundance of rich-coloured king-salmon, split and hung up over the water, was picturesque in the extreme. They were indeed cleanly when compared to us; it seemed as though we had never seen bedding look so clean and comfortable, or the colours of calico so fresh." Allen's command was in great distress for food and secured a seasonable relief from these people.

The Coschaket village dwindled in size when the mission at Tanana was started, but in the last three or four years has been considerably augmented again by migration from that place; some of those who came up being perhaps moved by the desire of getting away from

the dissolute surroundings there, and others, it is said, by the desire of escaping the surveillance and remonstrance of the mission and even the small degree of restraint exercised by the civil authorities. It is very easy, but it is not always safe, to assign motives, either to white men or Indians, and I have dealt with the matter of liquor amongst the natives elsewhere. The only hope for the survival of the Tanana River Indians lies in the thorough execution of the prohibition law lately enacted by Congress. The visitor will note that the cabins built recently at the Coschaket mark an advance in native architecture.

The headwaters of the Cosna interlock with tributaries of the North Fork of the Kuskokwim, and from the Coschaket starts a winter overland route to Lake Minchumina.

Soon after leaving the Coschaket the high rocky ridge is approached on the north bank of the river at the foot of which the channel runs all the way to the Hot Spring Slough, and behind that ridge, some distance inland, are the small mining-camps of American Creek and Sullivan Creek.

The Hot Spring Slough comes into the Tanana about seventy-five miles above the mouth of the river, at a conspicuous point where our course up the river leaves this bold ridge and turns sharply to the right around a great stretch of flat land that has apparently built itself out from the bluffs. Ten miles up the windings of the slough (though it is but one mile by the road that has been cut straight across this flat to the nearest point

of the river) lies the town of Hot Springs, the centre of considerable business from the neighbouring miners.

Hot springs are not uncommon in Alaska and do not strike one as so remarkable in the summer as they do in the winter, when, at this place, a considerable extent of ground is free of the snow that covers the country and a body of water disdains the fetters of the frost and runs open and unconstrained even at the lowest temperature —enveloped in steam that is condensed on twigs and boughs in ever-gathering deposit until they break down beneath the weight thereof. The water, issuing forth at a temperature of 110 degrees F., and carrying, it is said, little or no mineral in solution, is employed to irrigate a tract of ground noted, as would be expected, for the earliness and excellence of its yield.

One curious and sinister result, as I suppose, of the peculiar conditions for vegetation which these thermal springs produce, is the growth of poisonous plants that I do not think are found elsewhere in Alaska. The wife of the local physician, a few years ago, pulling a small wild tuber from the ground and nibbling it as she walked, was seized with violent cramps, and shortly thereafter died in great pain despite all her husband could do. The plant, it is said, was a wild parsnip.

Ten years ago an attempt was made at the exploitation of this place as a "resort" for successful miners luxuriously inclined (to put no other face upon it). It was in the heyday of the Fairbanks camp and a stage route, passing the Hot Springs from Fairbanks to Tanana had lately been established. A spacious hotel of

massive logs was built and "furnished with every modern convenience," including ample swimming-tanks to which the hot water was piped. Poultry-yards and cow-barns and piggeries were made that fresh foods usually unobtainable in Alaska might be continually supplied, and, altogether, it is said that upwards of a quarter of a million dollars was expended. But the speculation had no success, and when the hotel burned down three or four years ago it had already long been disused. The chief memorial of it that remains is the denuded condition of the little valley, from which the most extraordinary fine trees in the interior of Alaska were cut with a ruthlessness that rankles, in its degree, like the burning of Louvain. A forest and a town, that are the slow beautiful growth of centuries, make not dissimilar appeal to men of feeling—and to the quick, irrevocable axe or torch, as the case may be, of an invading barbarian.

Just above the "Hot Springs Landing," which is at the end of the straight road across the flat referred to, is a bad river crossing, with an ugly sand-bar bordering it, upon which it is particularly easy to drift, and from which it is particularly hard to get off, on a down-stream journey. The navigation of the Tanana, like the navigation of the Yukon, would be greatly facilitated by the setting up of sailing marks at points like this. Turning around the upper part of the flat land we come back to the bluffs at Baker Creek, up which creek the telegraph-line passes upon its way to Rampart on the Yukon, and, in the winter, the mail trail follows it. The rough triangle formed by the Yukon and Tanana Rivers and this

telegraph and mail line encloses an area which is generally auriferous, and many creeks in it have been worked from time to time and a number are worked now.

Wood-camps and fish-wheels are much more plentiful along the Tanana than along the Yukon or any other of its tributaries; the greater steamboat traffic encourages the one and the complete opacity of the water the other; and both Indians and white often combine wood-chopping and fishing as summer avocations. Once when tied up for the night in the vicinity of such a camp (at a season, the reader will remember, when there is really no night and conditions of labour are much the same all the twenty-four hours), unable to sleep for the sound of chopping in the adjacent woods and the doleful groaning of the fishing apparatus as it revolved upon its ungreased axle, I discovered a meaning and a terror in Goldsmith's "the lifted axe, the agonising wheel," that the poet never contemplated, and started the engine again to move out of ear-shot.

The day of the wood-camp will pass with the opening of the Nenana coal-field by the new railroad, if, as there seems no reason to doubt, the confident expectations of its prospectors be realised, and with it will pass one of the ready means of making a living which interior Alaska has afforded since steamboating began, to no inconsiderable number of men. A man completely "stone-broken" and "down and out" could hitherto always take his axe and support himself. A contract for an hundred or an hundred and fifty cords of wood, at from six to eight dollars a cord, depending on locality, could readily be

obtained from the steamboat company's representative, upon the strength of which contract, if a man had any reputation for reliability at all, and sometimes though he had none, he could secure credit for enough grub to enable him to execute it. I am afraid that the passing of this means of support will throw many more men into fur-trapping, an occupation already overdone; with the additional undesirable feature of throwing them into contact and competition with the Indian.

After leaving Baker Creek there is little of special note to mention until on its left bank the Tanana receives one of its most important tributaries—the Kantishna, and this river is the highway into such wide and such varied country with such wide and varied interest that I think if I were allowed to be sufficiently discursive I could write a book about the Kantishna alone. One of its tributaries is the Bearpaw, which receives the "McKinley Fork," which drains the Muldrow Glacier, a glacier thirty or forty miles long which brings down the ice from the northeastern face of Denali (Mt. McKinley), and into this glacier discharges another loftier glacier by one of the highest ice-falls in the world, I think, and into this loftier glacier the snows come avalanching down from the summits themselves, so that the Kantishna has the distinction of deriving its ultimate waters from a greater height than any other river in North America. The Peters Glacier and the great hanging glaciers that for ever deny the north face of the mountain to the foot of man discharge into another fork of the Bearpaw.

Away to the westward another tributary of totally different character drains Lake Minchumina, one of the largest lakes of interior Alaska, and affords a passage for boats of light draught into that lake. Lower in its course the Kantishna receives the Toklats, famous for the foot-hill hunting-ground of big game from which they issue.

The Kantishna has a mining-camp of its own amongst the creeks that flow into the Bearpaw, and in the fall of 1905, when a man took eighty thousand dollars out of one hole in the ground, immediately there was a great "rush" to the district, and "cities" were built here and there, populated during the following winter by some three thousand men; but strangely enough they found little more gold, nor has much more since been found, and they rushed out again in the spring, leaving the "cities" as desolate as Tyre and Sidon, and so they stand to-day, the Ruined Cities of the Kantishna—Glacier City, Diamond City, Roosevelt City, McKinley City, Bearpaw City. They have no glamour of "Cold Lairs" where blind cobras keep ward over subterranean treasure-chambers, and you would not seek for a "king's ankus" amongst their ruins. Miners do not hoard gold; nowadays they get their pokes of gold-dust to the bank as fast as they may and are impatient for their certificate of deposit; there was never any great sum taken out of the Kantishna anyway after that first sensational strike, and Alaska is as free from snakes as Ireland. Yet the deserted dwellings, the tumbling-down drinking and eating places with antiquated calendars and rotting ad-

vertising pictures still hanging on their walls, have a melancholy if not very romantic interest to the reflective mind. The moose and her young roam through them at will, the squirrels use them as storehouses, the owls flit in and out of their broken windows, and they not only proclaim the lesson of mutability and transitoriness as well as Niniveh or Baalbec, but in their silent decay, as they lean helplessly this way and that, with the willow brush and the rank grasses closing in on them, they seem to wear a fixed sardonic grin at the folly of men, as though one should paint the clown's lines on the face of a corpse.

Quite a to-do about a few groups of rotting log cabins, think you? Well, the summer visitor, to whom the foregoing description shall seem fanciful and overwrought, must consider that it is in the depth of winter rather than in perpetual sunlight that these dark and silent "cities" produce their most pensive effect.

Into all this hinterland the Kantishna gives readiest access—to or from it the Kantishna is the accustomed highway. Indians from Tanana and the Coschaket, wandering across country from their spring hunting, pitch their moving tents towards "break-up" time on the creeks, its affluents, and making boats of the hides of the moose they have killed, load them when the ice has gone with the sun-dried meat, with wives and children, with dogs and sleds and all the equipage of winter, and float rejoicing on its first water to their homes again. Down its stream come also the gentlemen hunters from New York and Boston bringing out their big-game

trophies "for the Smithsonian." The slaughter attributed to the demands of that institution must already have piled high its repositories with the heads of mountain-sheep, moose, and caribou. Up the stream go the supplies for the handful of miners who still make a living in the camp eked out with the plentiful game, for the trappers who glean the scanty harvest of foxes their own strychnine has not yet completely exterminated, and for the prospectors who renew every winter their search for the precious metal among the foot-hill creeks. The gasolene launch is gradually superseding the slow, laborious poling-boat, but many a man still puts his winter's grub, his tent and stove and bedding, his dogs and sled in one of these long, tapering craft and propels it hundreds of miles up-stream by the unaided power of his arms. Along stretches of river where there is a beach the dogs may be used to help, but for the greater part the pole is the sole dependence.

The Kantishna is one of the affluents of the Tanana responsible for the muddy condition of its water, and if it could be ascended to the head of the tributaries that come from the farthest southeast, the reason thereof would be well understood. Surprise is often expressed by visitors who make their first acquaintance with glaciers on the Alaskan tour (and their number grows every year) that water derived from the melting of snow and particularly from the melting of the high snow of mountain tops should come down to the river so dirty, so surcharged with sediment, as to foul those rivers even to their mouths. Could such an one stand by the side

of the McKinley Fork which issues out of and drains the Muldrow Glacier, his surprise would increase to see that stream flowing over its wide boulder bed literally as black as ink; a rushing, roaring torrent of as evil-looking water as one could discover elsewhere than in the discharge of a sewer main or some vile chemical works.

But if he could go upon the glacier itself, even as high as twenty miles above its snout (at which point it is most readily reached), in the early summer and, see its surface all scattered over with black lumps that look like coal, but are in reality a kind of shale which shatters down from the tops of lofty granite ridges curiously crowned by this grimy, partially soluble rock; if he could go there and spend a little time in leisurely observation along a portion of the glacier, he could deduce for himself the prime fact of physical geography, that a glacier is no mere drain, but the greatest excavating agent in the world; is, in fact, nature's chief chisel. He would learn that underneath, out of sight, it is continually digging at its bed in the bowels of the mountain, while on top it is continually receiving landslides of dislodged boulders and shattered rock which in the summer sun sink deep into its melting mass, and that in its slow irresistible movement, inch by inch, it splits and shivers and crushes all that it digs up and all that is cast down upon it, grinding it as corn is ground in a mill, grinding and regrinding until its attritus is so fine and smooth and impalpably pulverised that the special term "rock flour" is used to describe it. Could he see this thing actually going on as evidently as he can see that a plant

is growing, and realise, as I think only such personal experience makes one fully realise, that the glaciers are the greatest of all the abrasives of the surface of the earth, he would be no more surprised at the sediment carried in their drainage than he would be to find the dust of brass and iron underneath a carborundum-wheel, and he would understand why the McKinley Fork runs so thick and black with the resultant discharge during the heats of summer that it fouls the Kantishna, the Tanana, and even the Yukon.

Such a personal examination of a great glacier is well worth while once in any man's life, even if it were at the cost of time and trouble which a journey to the Muldrow Glacier would involve, for there is nothing so illuminating, so fertile of new and more adequate conceptions of the prime processes of nature as a thoughtful and circumspective visit to a glacier.

Although I knew a little of what had been written about glacial action, and had read Tyndall's "Forms of Water," as a boy and had even taken some interest in the famous controversy about glacial movement (an interest chiefly due, I am afraid, to the acrimony it aroused), yet my first visit to a glacier had something of the effect upon me that his "first looking into Chapman's Homer" had upon John Keats. It was a revelation of the mightiness of the ice; mightier than all storms and thunderbolts, mightier than the catastrophes of earthquake and volcano; secretly, almost silently, inch by inch through the long ages, grinding down mountains and carving out valleys; reducing the adamantine

primeval granite of thousands of lofty peaks to soluble dust and spreading it as soil over the low places of the earth. Once more it was not the fire, nor the whirlwind, nor the earthquake, that was pregnant of most power, but a still small voice.

Yet if I could take the traveller from off the uncomplaisant steamboat, running only its regular route, and carry him withersoever I wished—which is the joy of the *Pelican*—I would not turn from the upper Kantishna into the Bearpaw that we might visit the Muldrow Glacier, for we should scarce come within fifty miles of it at best. I would take him up the clear, bright arm of the river that draws the overflow of the great lake, and I would blindfold him until we were far out upon the lake so that we had its blue waters as a foreground, and then I would suddenly present to him the noblest view of mountains in all North America, and one surely of the noblest in the whole world. From that level, less, I think, than a thousand feet above the sea, I would show him the sheerest, most precipitous face of Denali and Denali's Wife (Mt. McKinley and Mt. Foraker), companion peaks, rising by escarpment upon escarpment to jagged pyramids that thrust themselves, one nearly four miles and the other more than three miles, into the "stainless eminence of air"; with their buttresses and ridges, their connecting arcades, their steep slopes, and awful headlong pitches, all glittering in perpetual snow. This sight, the finest that Alaska has to show, is hid from the wise and prudent who travel in comfortable state, and I shall not pretend to be sorry that not even the

new government railway will conduct them to it. The Indian in his birch-bark canoe gazes upon the scene with awe if he no longer people it with demons; the prospector intermits a while the propulsion of his poling-boat to feast his eyes upon it; the chance winter traveller from the Tanana to the Kuskokwim is grateful when the wind disperses the clouds that so often envelop it.

Though far away from the Tanana in this part of its course, the great mountains of the Alaskan range have always been closely associated with this river. The Hudson's Bay factors at Fort Yukon knew it as "the river of the mountains," its natives were called "Gens de Montagne" by the French-Canadian voyageurs of that employ, and vague rumours of its lofty snowy peaks are among the early reports which came out from the interior of Alaska. I rejoice that the region has now been made into a National Park and that its game will be preserved, but I am glad that in all probability a certain amount of bodily exertion and bodily discomfort will always be required of those who would visit the finest scenery it contains.

I have indulged myself, and I hope I have not wearied my reader, in lingering upon the Kantishna; ten miles farther up the Tanana on the other bank another important tributary comes in, the Tolovana, and at its mouth is a trading-post and a telegraph-station and a small village of Indians.

The striking difference between the two tributaries is in the water they bring; the one, as we saw at much length, turbid in the hot weather with the sewage of its

glaciers; the other clear and limpid, slightly tinged, it may be, with yellow from its mossy woodlands. This difference is generally characteristic of the tributaries received on the left and on the right banks of the Tanana. All the larger streams confluent on the left bank are glacial and turbid; all those confluent on the right bank are clear. It should be said, however, that, although the Kantishna has been taken to illustrate the glacial tributaries, it brings down so much water that does not come from glaciers by other branches that its own stream is not so dirty as some of the other glacial affluents, except in times of great heat.

The Tolovana drains Lake Minto, which is rather a region of lakes than one body of water, and it receives the important affluent, the Chatanika, into which many of the gold-bearing creeks of the Fairbanks camp fall. But the Tolovana River has now a gold-camp of its own —the latest, and it is thought the most promising camp of interior Alaska. On one at least of its creeks, Livengood, a rich pay streak has been found and the output of the season of 1916 was upward of six hundred thousand dollars. It is unfortunate for easy access and supply to the new camp that the navigation of the Tolovana River is interrupted about eighty miles above its mouth by an extensive and inextricable log-jam, the accumulation of untold years, which the sluggish meandering stream constantly adds to but is unable to remove. A tram-line has been constructed around it and other craft are employed for sixty miles more, involving the expense of transshipment.

The chief town of the Tolovana camp thus reached is named Brooks, after Mr. Alfred Brooks, the head of the Alaskan Geological Survey—a compliment to a man to whom the mineral development of the interior of Alaska owes far more than to any other man in its history. It is said to have been directly from Mr. Brooks's report that Livengood and the Hudson Brothers began the prospecting of this region which resulted in the discovery of gold.

The traveller who goes ashore for a stroll at Tolovana while the steamboat discharges freight or loads wood will observe the wire enclosures of a rather extensive fox-farm a little behind the trading-post and the road-house, and will thus come into contact perhaps not for the first time with an industry that has recently made extensive appearance in interior Alaska. The summer of 1914 saw the excited beginning of it, when fancy prices were paid for dark-skinned live foxes and an occasional fortunate Indian found himself with more money than he had ever had in his life before. It is stated that in the following winter sixty-three permits for fox-farms were issued. Whether this business is destined to play an important part in the economy of interior Alaska it is hard to say; so far I think no one has made money by it, but there was much to learn that could only be learned in practice. Experience teaches, but often charges a high price for lessons, and the fact that many fox-farms have already been abandoned has little bearing on the future. One thing is regarded as established—that the offspring of dark-coloured parents is likely to be dark;

though a pair of silver-greys or blacks are by no means sure to produce their own colour. The difficulty has been in rearing the pups, and that is probably a part of the prime difficulty of reproducing the natural conditions of fox life in its essential particulars.

There is no question, however, that the high prices which black and silver-grey fox skins bring is due principally to their rarity, and should it prove practicable to breed animals of such pelage with anything like certainty and regularity, the very success of the enterprise would mean its failure so far as high price for the fur is concerned.

Before leaving Tolovana the attention of the traveller may be drawn to the view of Denali, which in clear weather this spot affords—especially from the windows of the second story of the road-house. Glimpses of the mountain, now and again, henceforth may be had in bends of the river where the water presents an open foreground in its direction; but they are fleeting and must be watched for, and the difficulties inherent in the photography of distant snow-mountains will commonly refuse any record to the camera of the tourist. Upon my first journey up the Tanana, the great mountain, flushed by the setting sun, stood out most prominently in the gap of the river made by the bold bluff below Tolovana, and I put the camera on its tripod and made several careful exposures. When they were developed they proved excellent pictures of the scene save that they bore no trace of the mountain. There was the steamboat tied up to the bank in the foregound, there was the river bluff, there

was the gap beyond, but on none of them was the faintest suggestion of the glowing dome that had filled that gap and delighted my eyes—and I began to learn something more of the limitations of photography. Only a correct combination of speed and aperture, with a ray-filter or colour-screen over the lens, will procure any picture at all of these distant views of Denali.

We leave the mountain ridges behind us at Tolovana and follow a great curve of the river, first to the north-east and then due south, until we return to them at Nenana, sixty-five miles away, though it is no more than thirty miles in a straight line. This stretch of the river is the stretch least occupied by any sort of settlement, between Tanana and Fairbanks, and it passes with extensive bed and wide expanses of drift-covered sand-bar through forested flats with no salient landmarks. The abandoned telegraph-station of Minto (built, like others on the Tanana River, in the absolute wilderness, because it was supposed to be electrically necessary to have stations exactly forty miles apart; a superstition which the Signal Corps has now outgrown) marks the half-way point; but it must be looked for carefully or it will be missed. It was at first a curious experience to run in to this station where the two Signal Corps men lived with no neighbours save perhaps some encamped Indians for many miles around, and where yet you could communicate with New York or London if you so desired; but since one usually desired to communicate with Nenana, and the so-called Nenana station was just ten miles beyond that place, with dependence upon chance passing

boat or sled to deliver the message, the convenience to the public of this telegraph-line was not as great as it might have been.

This station of Minto revelled for several winters in the fame of being the coldest spot of all interior Alaska. Its sensationally low temperatures were telegraphed to the Fairbanks newspapers and by them were spread all over the world, until a traveller provided with a standard registered thermometer happened to compare instruments and discovered that the one employed at this place read about 10 degrees too low. Last winter the station at The Birches on the Yukon and the winter before that the station at Richardson on the upper Tanana claimed the same distinction, I am confident on no better grounds.

It is a small but characteristic illustration of the ineptitude with which Alaskan affairs are administered that while the United States Weather Bureau makes provision by both paid and voluntary observers for the recording of temperatures, furnishing accurate instruments that are correctly exposed and carefully read, the reports from its stations are commonly sent out by mail once a month; while these Signal Corps stations, furnished only with cheap commercial thermometers, which are nailed up on a post or a tree without shelter, telegraph their romantic readings every morning and announce degrees of cold that have never been authentically registered anywhere in the world except in Northern Siberia.

It was said of Tobias Smollett, in his decline, that his

THE NATIVE VILLAGE AND MISSION AT NENANA.

comments on the works of art in Italy should have been reserved for his physician; similarly it may be said in general that the temperatures announced from the Signal Corps stations in Alaska have little interest save as showing the wide range of index errors in cheap thermometers.

The mountains that border the north bank of the river are visible a long time before we reach them and appear tantalisingly near when yet they are far, and as we turn the endless bends towards them it may be expected that I will improve the time with prophecies about the future of interior Alaska, for the mountains look on Nenana and Nenana looks on the Railway. We approach the visible evidence of the New Era, and what writer so poor that he cannot kindle thereat and with glowing fancy expatiate upon the wonders he foresees? But the present writer would protest with Amos of Tekoa that he is no prophet nor son of a prophet, but a mere fig-gatherer, and will resolutely leave the business of prediction to others.

In a year or two, if the *Pelican* still have occasion to use this part of the river, she will pass under a suspension bridge that cost a million dollars as she reaches Nenana, and she will tie up to the wharfs of the best-planned, best-built town of the interior, from which a Pullman car will carry one to a seaport on the coast in a night if one so desire. Crossing the river by the bridge referred to, the railway will pass northeast behind the mountains, to Fairbanks. So much, I think, is certain. To my thinking this port at Nenana, where first the line

touches the navigable waters of the interior, will be its real terminus, and the people of Fairbanks seem to think so also, judging by the high prices they paid for Nenana town lots at the auction sale in September, 1916. But this verges upon the prophetic realm, from which I am barred. The coal will certainly come; the same line that carries the anthracite coal from Matanuska to the steamships of the coast will bring the bituminous coal from the Nenana River to the steamboats of the interior, and some small hint has already been given of changes that this will cause. It is expected that the farmers will come and that the whole region which the railway traverses, the Kenai peninsula, the valleys of the Sushitna and Chulitna, and the valley of the Nenana, will blossom with farms and ranches, while the Broad Pass by which it crosses the mountains is already staked out for quartz-mining on a large scale.

Meanwhile what of the native school and mission and the model village with which the town-site line marches? Settled long before any railway was thought of, a great deal of time and no little money have been expended upon them. The establishment includes a boarding-school for native children with some thirty pupils gathered from the Tanana and Yukon Rivers, an infirmary, a considerable tract of cultivated land, chiefly in potatoes for the school, and all sorts of outhouses and conveniences. Now that the new town has been thrust right upon it so that the lower line of the one is the upper line of the other, it is no longer eligible for its purposes. Already the pool-rooms "down-town" attract the larger boys;

the megaphone announcements of moving-picture shows on Sunday night resound over the mission reservation and excite the children; the women of the village begin to frequent the streets of the town. It is high time that the mission and the village were gone from an environment unpropitious for Indian development.

Yet how shall we move this school and mission, how transport this Indian village, the fifty or sixty miles away that it ought to go? Of all the lavish millions spending on this railway for the benefit of the white people of the interior, might not a few thousands have been spared to make this removal? The absolute necessity of it may not be evident to those unfamiliar with such situations, but to any who have interested themselves in the welfare of the Indian people has come the knowledge that it is impossible for an Indian village and a white man's town to exist side by side without the demoralisation and decay of the Indian. It has been proved over and over again here in Alaska; it has been proved at Moosehide, at Eagle, at Circle, at Rampart, at Tanana, on the Yukon. From other regions instance after instance might be given, authority after authority quoted. What is the use of proving it once more?

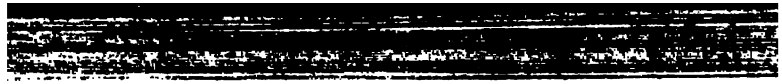
And if there be those who care for none of these things, who care nothing for the Indian, who will tell you, cheerfully enough, that the Indian is bound to die off, and the sooner the better, even to these cynical and shallow natures there is reason sufficient for the removal of the Indians, did they but know it. For an Indian community, degraded with the white man's vices and

infected with the white man's diseases, becomes, in turn, a focus of such infection, becomes in a particularly virulent way a fresh source and seminary of the plagues it has received; and that is the Nemesis of such cynical selfishness. Just as the foul and neglected slums of a great city harbour the contagion that spreads into the "residential section," and takes its toll of luxury and wealth, so will an Indian village repay in full measure the corruption it receives from an adjacent white man's town.

The authorities at Washington, upon whom this matter has repeatedly been urged, make reply that they have no power to act; that a bill must be introduced into Congress, though they themselves decline to introduce such bill; and we who painfully gathered the funds for the work that has been done here and for ten years have struggled to carry it on, must set our hands to the distasteful task, a task for which we have no turn or temper, no organisation or facilities, of securing the introduction and passage of the bill; or else must abandon the site and the buildings, and beg from the magnanimous and the generous the funds to renew elsewhere an undertaking for the betterment of the Indians which the railway enterprise of the United States Government has destroyed.

In our preoccupation with the New Era and the great works with which it is ushering in we passed right by the mouth of a considerable tributary of the left bank without noticing it. Let us go back half a mile and gather that fig. Lieutenant Allen, in 1885, having no

THE MISSION BUILDINGS AND POTATO-FIELD AT NENANA.



Indian with him to give him the native name, called this river the "Cantwell" in honour of an officer of the revenue service, and it so stood upon the maps until the mission was founded here in 1907, and then the National Board of Geographic Names, which decides all such matters, was prevailed upon to restore to the river its Indian name, Nenana, by which alone it had been commonly known. The lower Tanana has been more fortunate than the upper in retaining the beautiful Indian names of its tributaries. Nenána, Tolována, Kantishna, Chatanika, Cosna, are surely more distinctive and appropriate, as well as more euphonious, than the Johnson and Robertson, the Gerstle, the Goodpaster and the Volkmar, which Allen succeeded in fastening above.

The Nenana is a clear-water stream, not navigable many miles. Thirty or forty miles above its mouth it passes through a cañon up which poling-boats are sometimes propelled, but it is not a highway of any travel. It drains the foot-hill and valley country, though its Yanert Fork pushes headwater streams into the Broad Pass, where it interlocks with tributaries of the Chulitna which drains into Cook's Inlet.

The visitor whose steamboat lies any length of time at Nenana is advised that when he has exhausted the attractions of the new town, it is well worth while to procure some one who will set him across the river in a skiff and to climb the high ridge on that side. Not only will he gain from its crest (or even from its benches without proceeding to its crest) an adequate conception of

the wide expanse of the valley of the Tanana, but he will command in clear weather a splendid view of the lofty peaks of the Alaska Range in the distance. Denali will still dominate the scene, but the great serrated wall of mountains will stretch far to the south and will include peaks as distant as Mt. Hayes. Standing there, the observer can trace the course of the railway to the depression of the range—which indeed is almost an obliteration of the range—called Broad Pass, and can well conceive its course on the other side thereof down to the sea. A little time spent thus on occasions will give a far juster impression of the country than the mere travelling of its rivers can ever give.

Upon a bench of this ridge may be seen from the town a large Celtic cross of concrete. It marks the grave of a very noble gentlewoman, Miss Annie Cragg Farthing, who started this Indian school when there was naught but a rascally liquor-peddling trading-post where the town now stands, and a village of half a dozen cabins huddled at the foot of the ridge on the opposite bank. She not only devoted herself body and soul for three years to the children she had gathered, but in a very true sense she laid down her life for them, for her death was due to the shock she received when a dissolute half-breed, inflamed with the trader's liquor, broke into the house in the dead of a winter's night, gun in hand, intent upon killing her because she had refused him a girl he desired to marry. "You may kill me if you like, but you shall not have that girl," was her response to his threats as she faced him unflinching. Her brother, the

Bishop of Montreal, and her colleagues of the Alaskan mission set up this cross over her grave.

Our course up the river continues to have rocky ridges on our left hand and vast expanse of forested flat on our right all the way to Fairbanks, which is seventy-five miles above Nenana. Indeed, this is its general description up to the point where the Alaska Range approaches close to the river, nearly three hundred miles above Fairbanks. So here is another river pressing upon its right bank almost throughout its course, and I know not if its general northwest direction of flow will be held to account for the circumstance, by the influence upon the water of the earth's revolution on its axis, since, as I have pointed out, the same circumstance obtains in the middle and lower Yukon, where the general direction of flow is southwest, and we shall find the same thing in the Koyukuk which has the same general trend as the middle Yukon. All these rivers press on their right bank, and it is difficult to account for it. Certainly the theory of Nordenskiöld and Nansen fails to do so.

A number of clear-water streams draining the wide lowlands are received from time to time on the south bank as we proceed, the Tatlanika, the Totatlanika, the Wood River, navigable for some distance in poling-boats, their mouths dotted with fishing encampments and wood-piles and, of late, since the building of the new town at Nenana, with sawmills. The fishing camps grow in number and size as we approach Fairbanks, supplying the demand at that place for dried fish as feed for dogs, and habitations of one kind or another are frequently

passed, many of them with some garden-patch adjacent. Denali is now out of sight, but lesser and more southerly peaks of the range, still far distant, are visible from time to time when the foreground is open.

Fairbanks is not situated on the main Tanana but on an island made by a slough which leaves the river some forty miles above the town and returns to it some ten or twelve miles below the town, receiving the Big Chena River about midway, much as the Chageluk Slough leaves and returns to the Yukon and receives the Innoko. At the point where the slough returns to the Tanana, Chena is situated; one might almost write *was* situated, so advanced is its decay. Its story has often been told; I have told it elsewhere myself; it is the classic Alaskan instance of short-sighted greed that overreached itself and "lost out."

This confluence of the main river with its returning slough is the real head of steamboat navigation of the Tanana. Some of the worst obstructions of its farther navigation are encountered almost at once after leaving Chena on the main stream, while the slough is navigable with difficulty as far as Fairbanks, only when the stage of water is good. Topographically Chena is excellently placed, with high river-bank and level space of ample extent, the ground rising behind it into a picturesque bluff, while the gold-bearing creeks are close at hand and easily reached. With full knowledge of the country, its facilities and its difficulties, its transportation problems, the occurrence of its mineral wealth, the needs and conveniences of its people, Chena would certainly be chosen

A NATIVE FISH-CAMP, NENANA.

as the site of its principal town; indeed, there is no other place that would be considered at all. Yet Chena, with all these advantages, has been a dead town these ten years past, while Fairbanks, with none of them, during all that time has been not only the chief town of this region but the metropolis of interior Alaska.

The stories of the discovery of the Tanana gold-field and of the locating of Fairbanks are bound up together as would be supposed, and yet not at all as would be supposed, since the second preceded the first; and both are inseparably connected with a trader named Barnette.

The eyes of gold-miners in the north had long been fixed upon the Tanana River country. It was remembered that as far back as 1878 Arthur Harper had found "prospects" somewhere in the district; the Circle and Fortymile camps reached back towards it, and the scouting advance-guard of those camps had penetrated more or less into it—to the Chatanika from the one and to the Goodpaster from the other. But the chain which holds back the prospector is the limit of the distance to which he can haul food; he may stretch it a few links by extreme frugality, by the address with which he can utilise the resources of the country, but there comes a point when it can be stretched no more, and that point remains the *ne plus ultra* of gold-seeking exploration until some more advanced base of supplies is established. There was no base of supply save on the Yukon, and the intervening country was rugged and difficult. When the Klondike camp began to decay the need of a new field for the energies of the many miners there became

pressing. The Nome stampede of 1900 relieved the pressure somewhat, but this was still the situation in 1902 when Barnette with a trading outfit went up the Tanana in the first steamboat that disturbed its waters.

Barnette had no knowledge of the river nor even definite notion of where he wished to establish himself, but he was anxious to reach the upper Tanana where he could tap a new country for furs. The difficulties of the Bates Rapids above Chena turned the boat back from the main river and the passage of the slough was attempted. Somewhere in the neighbourhood of Fairbanks the captain decided that he could proceed no farther and Barnette and his stock of grub were landed, despite, it is said, his vehement protests and expostulations.

It was a poor location for a trading-post. There were no natives in its vicinity and few in its district; something had to be done to dispose of the stock. A little prospecting was perhaps attempted on the creeks in the immediate neighbourhood, but the story runs that before any pay or even prospects were found a Japanese in Barnette's employ was despatched across country to Dawson with news of a "strike," and this message precipitated the Fairbanks stampede in the winter of 1902 and the following spring. The men who came were indignant with the deception that had been practised, and there were threats of lynching Barnette and his Jap, but they went to work prospecting the country and it was these men who actually discovered the gold they had been led to believe was discovered al-

ready. Goldstream was the first creek to yield pay, and when Cleary Creek followed there came another and greater influx of miners; a town was built and named for the well-known senator from Indiana, afterwards Vice-President of the United States; and the winter of 1903–4 was one of those starving times which mark the early history of every mining-camp in this country.

Meanwhile the natural advantages of Chena had attracted traders and settlers, and a rival town was started there in the summer of 1903. It is said that when Barnette began to realise the extensive promise of the new camp he had accidentally called into being and the ineligibility of his own town site, he offered the settlers at Chena to remove thither and abandon Fairbanks if they would give him water frontage to build upon—an offer which was scornfully rejected. I know that as much as two years later all building lots were held at a very high price and that the imminent abandonment of Fairbanks was still an article of faith at Chena.

It was in the summer of 1904 that Fairbanks had its reasonable assurance of stability and its great fever of building. The federal judge had come over from the Yukon in the spring and had procured the building of a court-house and the removal of the federal officials thither from Eagle, thus making Fairbanks the administration centre of the interior, while the discovery of yet other rich creeks promised an output of gold second only to the Klondike. From the first, newcoming tradesmen, were welcomed with open hand and allowed to stake out building lots for themselves; lots were set aside for the

government buildings, for schools and churches and hospital; and every additional business that was established was an additional bond to this location and against removal, until their cumulative power was far stronger than the natural advantages of Chena upon which that place had selfishly and blindly relied;—and so an end of Chena.

A railway from Fairbanks to the creeks and to the river at Chena, the first railway in interior Alaska, knit the district together a little later and provided for the transportation of people and supplies when the Fairbanks slough was too low for navigation.

The visitor will thus find it easy to proceed to such examination of the gold-mines as his time and inclination allow. He will find extensive workings still in progress and more extensive abandoned, with the usual melancholy accompaniment of such abandonment. I dwelt somewhat upon this feature of a placer-mining country in the Kantishna, rather than here, since in the Kantishna are few left to shudder at a *memento mori* while Fairbanks not only lives but confidently expects to live.

Placer gold-mining in the north has worked out its own special technique, and while differences in the nature and depth of soil and the supply of water involve differences of operation that are of interest to the miner and indeed of so much concern to him that upon them may turn the financial success or failure of his enterprise, there is a general sameness in the processes employed. "Pay" being discovered at the bottom of a shaft, the

gravels that carry it are thawed by steam, removed by pick and shovel and wheelbarrow from the drift to the shaft, and lifted therefrom by a self-dumping hoist, which, when it has brought the loaded bucket to the surface, carries it up an inclined wire to the top of the dump, and there at the precise moment the bucket is automatically tripped and its contents discharged upon an ever-rising, ever-broadening cone of pay dirt. This process continues at one spot and another all the winter, until by the spring a creek where active mining is going on is covered with conical dumps that look like gigantic ant-hills.

Then, when water is available once more, the sluice-boxes are set up and the dump is gradually shovelled into them while the water runs through them; the gold by reason of its greater weight sinks and is caught by the riffles at the bottom of the box, while the lighter dirt passes off with the rush of water on top. If conscientious care be taken to keep track of the gold content of the dump by continual "panning" of average buckets (or of a handful taken from *every* bucket), the operator should know within pretty close bounds what his dump will "clean up." But it is surprising how many men permit themselves to delude themselves that their dumps carry much more gold than the water reveals. The temptation to pan the known good dirt is strong; the known poor dirt does not exercise the same fascination.

Improvements and refinements in the methods of mining are continually made; there is just now a device of underground excavation by which a steam-shovel digs out tunnels that hitherto have been dug with picks,

which some think will revolutionise the working of deep placers; and with the coming of cheaper fuel will doubtless come many other economies of machinery.

But we are bound yet much farther up the Tanana River if the *Pelican* can compass the voyage; a cache of gasolene had been made during the previous winter at "McCarthy's" about eighty miles above; and there is choice of routes either up the slough to its issuance from the river forty miles or so above, or down the slough to Chena again and then up the main stream. The obstacle to the voyage up the slough is its shallowness, for after passing the mouth of the Big Chena its waters dwindle and will only rarely afford passage to a craft drawing sixteen or seventeen inches. But there has been much rain and the slough is rising and we resolve to attempt the passage. June is the propitious month for the upper Tanana and this is a wet June. We make good time to the confluence with the Big Chena (so called not because it is itself particularly large, but by contrast with a smaller stream of the same name), but from that point we advance with increasing difficulty. The freshet water is coming out of the Big Chena, the course is very tortuous, and the channel actually right up against the bank on one side or the other, with overhanging trees that continually brush against the side of the launch. The pennons and ensign that proudly fluttered as we left the water-front at Fairbanks—crowded with spectators interested in the attempt—are taken down lest they be torn off; the three flagstaffs are themselves removed lest they be broken off; the decks and the roof of the cabin

are soon covered with leaves and twigs from the overhanging foliage through which we are forcing a way, and presently in one such arboreal passage, a bough threads itself in the ring on the top of the starboard light, hooks the lantern out of its socket as neatly as you please and drops it in the water. The open windows of the cabin and engine-room are continually invaded by the greenery, and when we close them against intrusion the glass is in danger. The *Pelican* soon loses her accustomed trimness and her condition is a mute appeal against such usage. We continue, however, to find a narrow way until we are within half a mile of the head of the slough and then there is a shallow gravel crossing over which we cannot pass. The water spreads in a broad sheet over the gravel, and try it where we will the depth is insufficient. One of our boys puts on the rubber hip-boots, takes a graduated sounding-pole and passes over every part of that crossing with the same result.

There is another arm by which water enters from the river, and we drop down a little and try that, but with no better fortune. It is tantalising and mortifying to have the main river so nigh and yet not be able to reach it; but there is no help for it and we turn back, the more hastily that the water is evidently falling instead of rising and we fear being caught in the slough—unable to return. At a bridge where the overland trail crosses the slough we are but twelve miles from the Salchaket, where is a mission to be visited, and here the bishop decides to make that journey on foot and we put him and another passenger ashore, ourselves resolved to

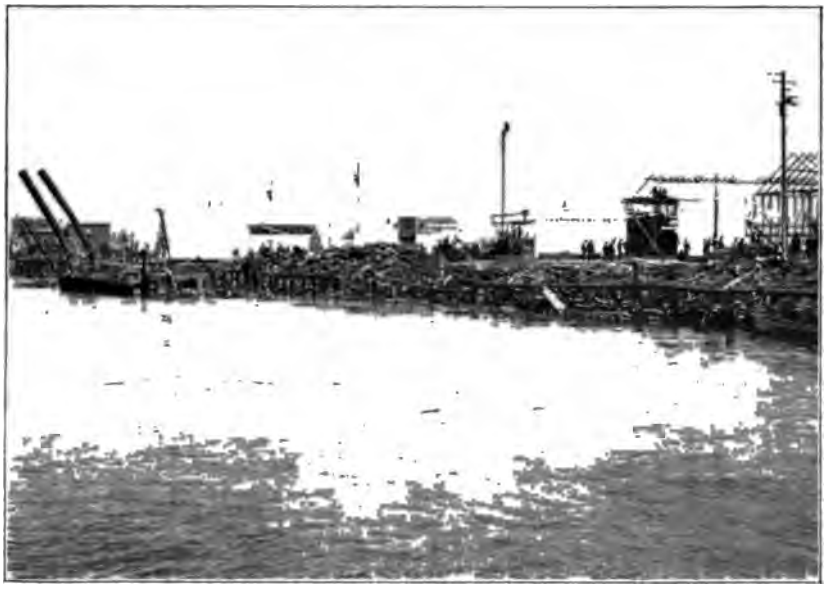
go round and attempt the main river passage and pick him up.

We reach Fairbanks, crestfallen, in the gloom of such twilight as the latter part of June affords, and are glad to tie up unobserved. Another starboard light secured (we do not need it now but shall by and by), additional gasolene obtained with difficulty—for there is shortage—and some slight repairs made, we drop down the slough to Chena next morning in pouring rain.

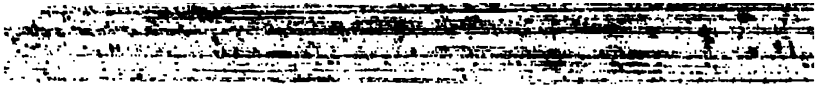
Allen named the long stretch of broken water on the main river, between the leaving and returning of the slough, the Bates Rapids, after an Englishman who made the first journey of which there is any record down this part of the Tanana in company with Arthur Harper. It is not unlike the Yukon in the Flats in that the water is spread over miles of country instead of being confined in one channel. But the Tanana here is much swifter than the Yukon anywhere, and instead of large spruce-covered islands are innumerable sand-bars loaded with driftwood between which the shallow water pours in many channels. The main stream does not sweep around bends as on the Yukon, but roars and rushes where it will amongst these bars.

We made some thirty miles in eleven hours for our first run and tied up; and the next morning it was evident that the water was rising considerably, for driftwood began to come down. After a run of little more than an hour a nut became loose in one of the "interrupter levers" of the make-and-break cam-shaft, and it was necessary to stop in order to tighten it. That

THE GREAT FIRE AT FAIRBANKS IN 1906.



THE RAPID REBUILDING A FEW DAYS AFTER THE FIRE.



make-and-break ignition system was a source of constant trouble to us and I do not think it had any compensating advantages. Certainly since jump-spark ignition was substituted for it we have had no ignition troubles to speak of, and are able to get fifty revolutions per minute more from the engine. There was always something going wrong with the make-and-break ignition. So we stopped to make this adjustment, and while endeavouring to set up the loose nut so tight that it should not again jar loose, my boy put too great a strain upon the wrench and it slipped and broke the cast-iron bracket which supported the sparking mechanism of No. 1 cylinder.

It looked as if our voyage were already done, and there seemed nothing for it but to hobble back to Chena upon the three cylinders that would still explode; but the absence of repair-shops on the Yukon and its tributaries induces an amount of self-reliance and ingenuity not common, I think, on more convenient waters, and Walter has these qualities highly developed. If he had a block of hard wood, he thought it would be possible to shape another bracket and hold it in place with wire. There was only one piece of hard wood on board and that was the stock of our shotgun, and, knowing the boy's resourcefulness, I gave the word to use it. He sawed it off and whittled it up and actually succeeded in fashioning a serviceable bracket, wiring and rewiring it to keep it in place, and again all four cylinders were exploding. It was a very creditable exploit, I thought, and still think, and the Indian pilot we had picked up at Chena

was so much impressed that when he returned home he told his friends that "when engine break, Walter he make new engine out of wood."

But all day had been taken up in this repair and so rapidly had the river risen that when we were ready to start, the little island to which we had tied the launch was gone, and the painter was fast to a tree sticking out of the water. Worse still, the drift was heavily moving; in addition to swift water we had henceforth to dodge trees and logs and all the floating trash that comes down with a freshet.

Certainly the *Pelican* had never been set such a task before, nor has had such since. In the very gut of a little rapid between two sand-bars, where she was just able to stem the current, here would come a log swinging and rolling towards her, and she had to drop back and lose what she had so laboriously gained to avoid a collision. Several times the engine had to be reversed suddenly to escape such an impact, for it is not possible always to judge with accuracy what a drifting log will do, and the sudden reversing of an engine at full speed is not the best thing in the world for the machinery. It is, however, in just such crises that the stanchness of the *Pelican's* machinery gives one a satisfactory confidence that it will stand the strain. The bracket held well with constant vigilance and occasional tightening of its wiring.

Mile by mile, all night, she fought her way up-stream, but her progress grew slower as the water rose higher and the drift came down in ever-increasing volume. I began

to doubt that we should succeed in ascending the river under the conditions present, but I knew that we were passing through one of the worst of its stretches and that above the Salchaket the going grew better.

Then we began to have trouble with the carburetter. When all the gasolene procurable at Fairbanks had been bought and our tanks were not yet full, I had bought what kerosene was procurable, for that was also scarce, and because there still was room I had poured in five gallons of denatured alcohol, which was a foolish mistake. The forward tank held fifty gallons of pure gasolene; we keep the forward tank as a reserve and do not draw upon it at all unless we have to; in the after tank, holding two hundred gallons, was this pernicious mixture of gasolene, kerosene, and alcohol. The kerosene mixture explodes very well, if it be not in too great proportion, but almost as soon as I had put in the alcohol, my mind misgave me about it. I might almost as well have used shellac varnish. I know not what chemical processes went on in the darkness of that rear tank, what mysterious synthesis, but from the perfectly clear liquids poured in, some sticky, gummy substance was precipitated in the carburetter that interfered with the action of the float-valve so that the thing began to flood. That meant tying up again and taking down the carburetter and cleaning it, with the prospect of repeating the process every few hours. So we switched on to the forward tank until the present stress should be relieved.

Shortly thereafter came the boat's crucial test. She was making six hundred and forty revolutions, which

was the very best she would do with her make-and-break ignition, and she came to a drift-laden bar beside which the current rushed so fiercely that sometimes the waves leaped up to the forward deck and swept over it. For a while it seemed that she could not pass that bar; ignoring the mad swirling waters and taking a tree on the distant bank as a mark, for minutes at a time the boat seemed stationary. Then we edged in yet a little closer, and with the pike-poles that we always carry sought the bottom to help her by pushing, but there was no bottom to be found. Yet a little closer still we pressed until we could grab some projecting pieces of drift, and get a precarious purchase on them with the poles, and so we made that passage. But when in an hour thereafter we had drawn away from that place no more than a mile, I knew in my heart that the game was up.

Could we have stopped and waited a few days for the subsidence of the flood, we could certainly make the Salchaket and, that much compassed, would, I judged, be able to proceed to the Tanana Crossing, some two hundred to two hundred and fifty miles farther, which was our hope and expectation, for there was a mission site to determine upon at that place. But the bishop's itinerary would not permit of that delay; he had to go to Point Hope on the Arctic Ocean that summer, and the revenue cutter *Bear* was his only means of doing so, and she had her fixed date of sailing from Nome and waited for no one.

The boys were as reluctant to turn back as I was, and I think it was as much on Walter's account, that his

"wooden engine" should take us through the Bates Rapids, as on my own or the bishop's, that her head was still kept up-stream, and I was rather glad than otherwise that something happened to turn us back and that we did not withdraw from the contest merely on my resolution to do so.

We were passing another such drift-laden sand-bar, and at top speed were no more than inching along beside it, the Indian pilot on the forward deck and Walter on the after deck, each with a pike-pole, while I had the wheel, when with a snap the wooden bracket gave way, its cylinder immediately ceased exploding and we began to drop back right on to a cheval-de-frise of drift-poles that bristled behind us. "Grab that drift," I shouted to the boy on the forward deck as I turned her head in, and he grabbed a projecting tree trunk and, locking his feet around the gipsy windlass, held on like grim death with both arms while the water swept over the deck and over him, and Walter, hurrying forward, got a line around it. Then we got a stern-line out, and, releasing the bow-line, let her swing down-stream, and so, with engines reversed, dropped to an eddy behind the sand-bar and there tied up. The damage was still reparable; more wires were wound and another purchase for them secured;—there are no limits to Walter's ingenuity; and presently all four cylinders were at work; but we all realised that further prosecution of the attempt would be but wasting gasolene and courting disaster.

What a wild journey that was back to Chena, shooting

the Bates Rapids!—one of the most exciting boat-rides I ever had in my life. With no more engine speed than would give good steerage-way we swept down that river, descending in less than three hours what it had taken upwards of eighteen hours to ascend. Walter never took his hand off the wheel during that time; the Indian pilot was crouched beside him on a locker of the engine-room, and neither of them, I think, so much as lifted his eyes from the course, for not only was the narrow channel to follow now on this side of a bar, now on that —safer, it is true, because deeper than when we went up —but there was still the drift to dodge. With perfect confidence in the steersman, I left the boat to him and watched the engine, and particularly the wooden bracket, and now and again allowed myself the pleasure of going on deck to see the world stream deliriously by.

"That fellow Bates must sure have been *some traveller*," I heard it remarked by one who had had a similar experience.

So that is as far above Fairbanks as the *Pelican* has ever been, though I am confident she can reach the Tanana Crossing at a good stage of water, given gasolene enough. She did not find any water she actually could not pass through in the Bates Rapids at flood, and she has more power now than she had then, while her winch, for "lining herself up," which every boat that attempts the upper Tanana has to use, was not employed.

It is a bad river, not really navigable at all, and its course is strewn with the wrecks of boats that have essayed to stem its current. When the Chisana strike was

THE BATES RAPIDS.

Showing the difficulty of navigation above Fairbanks.

made and a rush to that region took place in the summer of 1913 this river was the most direct highway, for the confluence of the Chisana and the Nabesna *makes* the Tanana, and many boats loaded with supplies set out from Fairbanks. Some of them reached their destination, but more did not, and I counted up six wrecks of steamboats that I had seen or knew of, lying here and there on the upper Tanana in the spring of 1917: the *Koyukuk*, the *Dusty Diamond*, the *S. and S.*, the *Atlas*, the *Tetlin*, the *Samson*.

It will not arouse surprise, therefore, that the river takes no small toll of human life. Never a summer passes but there are several drownings. A man flung into these icy waters has not much chance of escape; however strong a swimmer, the current sweeps him along, the cold cramps and paralyses him, the silt and sand begin immediately to lodge in his clothing and weigh him down, and unless succour be prompt it is unavailing. One of the saddest futile pilgrimages I ever saw was the visit of a distinguished officer of the United States navy to the banks of this river a few years ago, seeking trace of the body of his son, of whom all that any one knew was that the young man left a point on the upper river in an open boat, alone, and that an empty boat was picked up below Chena shortly thereafter. I met the father in Fairbanks arranging passage above; I met him later a thousand miles away in the Iditarod, inquiring for a man who had been in his son's company on the upper Tanana.

Our northern streams do not often yield up the bodies

of their victims; the temperature of the water is below that at which decomposition readily takes place; the gases of decomposition are therefore not formed and it is upon those gases that the floating of a corpse depends; while in the Tanana particularly the excess of sediment finds deposit in anything that even momentarily checks the rush of water and offers lodgment. Sometimes, long after, a body is found entangled in a drift pile, perhaps defaced beyond any recognition; sometimes it is caught in an ice-jam and held there all the winter, and perhaps when the snow melts in the spring an Indian travelling on the "last ice" will see a projecting arm or leg, and if there be those in the neighbourhood, white or native, with sufficient humanity to take the not inconsiderable time and trouble of extrication, the poor remains will be given decent burial. We have no public officials with any such duty. Our deputy marshals will not stir unless they have a warrant to serve—or if they stir they do so at their own option and expense—so that even when news comes of a living man in dire straits, frostbitten and starving, before any public agency for his relief can be set in motion it is necessary to swear out a warrant for his arrest as a vagrant!—a grim legal joke to make a "vagrant" of a man incapable of movement! But I must not get on that subject again.

Forty miles from Fairbanks by trail and perhaps sixty by river is the Salchaket, mouth of the Salcha, tributary from the north, and here are an Indian village and mission, a telegraph-station, a store and a roadhouse. Beyond that, another forty miles or so, is Rich-

ardson on the same side of the river, the decaying town of the Tenderfoot mining-camp, and another day's journey on the trail brings us to McCarthy's, just below which the Little and Big Delta Rivers come in from the south, draining the glaciers of Mt. Hayes and the two gable-peaks that rise side by side, known as The Twins. The summer overland trail crosses the river by ferry at McCarthy's, and automobiles and stages run during the season when road conditions permit; the winter trail crosses on the ice near the mouth of the Big Delta and goes up that stream towards the coast.

A few miles above McCarthy's the Goodpaster River is tributary from the north. This is one of Allen's names that has been transposed. He called the river the Volkmar, and a river tributary on the same bank twenty or thirty miles higher up the Goodpaster, one from a colonel in the army, the other for some friends in Kentucky, and they have been counterchanged, but since the names are retained Allen's purpose is served and the transposition is of no moment.

The extreme difficulty and danger with which this river is navigated above Chena is a great drawback to the mineral exploration of the country it penetrates. Winter and summer alike the river is bad for travel; it freezes late and breaks up early and its waters are so swift that in many places they do not close at all, and its ice is treacherous. There is no other equally extensive and equally important part of the interior of Alaska so hard of access as the upper Tanana country, and there is none into which a good practicable wagon-road could

be so easily constructed, for the left bank of the river for a couple of hundred miles above McCarthy's is bordered by a vast flat forested country reaching back towards the great mountains. The chief expense would be bridges over the numerous streams. But, indeed, the whole subject of Alaskan road commissions and Alaskan road expenditures is so immersed in unsavoury politics, so beset with "my friends" and "my enemies," that a retiring and inoffensive writer who has no desire to be placed in either category had better let it alone.

When the Goodpaster and the Volkmar, the Healy and the Gerstle have been received on the right limit and the Johnson and the Robertson and other glacial streams on the left, the great mountain range begins to draw close to the Tanana River, and opposite Lake Mansfield and the Tanana Crossing (so called because the military telegraph-line from Valdez to Eagle on the Yukon crossed it here) they loom up parallel with it, a great white wall. At Lake Mansfield is a native village, and seven miles above, at the Crossing, a mission has been established that seeks to serve all the scattered Indians of an hundred miles around. Clustering about the mission are numbers of new cabins, and the place is a centre from which Christianity and education stretch out their hands to Mantasta and Tetlin, to the Healy River and the Ketchumstock; one of the most difficult and expensive but also one of the most promising stations in the whole country—but I have seen it only in the winter.

Above the Tanana Crossing the mountains draw away again and the river runs free, with less obstruction to navigation for an hundred miles above, it is said, than anywhere below as far as Chena.

CHAPTER X

THE KOYUKUK RIVER

IT would be a matter of some difficulty to determine which is actually the largest of the tributaries of the Yukon, the Tanana or the Koyukuk, if volume of discharge were taken, as it probably would be, for the criterion. Many measurements would be needed at many different times during the open season, from the "break-up" to the "freeze-up," and one year's determination would hardly suffice. Comparative area drained, which might be another criterion, would require much nicer mensuration than could be based upon any existing surveys or any surveys likely to exist in our day.

Nor would it be an entirely easy matter to decide which is the longest tributary; length to the remotest headwaters would be one thing and navigable length would be another, and the term "navigable" is tolerant of several interpretations, particularly in Alaska. There are times when the Tanana is navigable by steamboats (or, at least, is *navigated* by steamboats) for a greater distance than they are ever able to proceed up the Koyukuk, but on the other hand, navigation is possible much farther on the Koyukuk than the Tanana during the greater part of the summer.

It has been said that the Tanana is by far the most

important of the tributaries of the Yukon; it may also be the longest by some standards and may discharge the greatest volume of water at some time; by other standards and at other times the Koyukuk would excel. The two main differences between the rivers are these: first, that the Tanana penetrates far to the south towards the coast, its headwaters reaching below the 62d parallel, while the Koyukuk penetrates far to the north, into the Arctic regions, its headwaters reaching well above the 68th parallel; and, second, that the Tanana drains great glaciers of the Alaska range of mountains, while the Koyukuk basin has no heights that reach the line of perpetual snow.

Having replenished her gasolene tanks from the cache maintained at the Koyukuk trading-post, the *Pelican* turns around the conspicuous mountainous bluff which is the landmark for many miles of the Koyukuk mouth, and enters upon her voyage of nearly five hundred miles to the mission at the Allakaket. The Russians called this bluff, which is a thousand or twelve hundred feet high, "Koyukuk Sopka," and Lieutenant Stoney in 1885, for reasons doubtless satisfactory to himself; though apparently unknown to anybody else, named it "Benelaracher"; it commonly passes to-day as the Koyukuk Mountain.

For nearly half the distance the journey is of the utmost monotony. The current is slack, the channel is serpentine, the banks are densely wooded with scrubby trees amongst which willow predominates. If willow were a valuable wood the Koyukuk country would not need

gold-mines. Such affluents as are received in this region are small, and interlock with streams flowing into Norton Sound on the one hand and into the Melozitna on the other. Father Jetté at Tanana could give the Indian names of a dozen of them, though the maps mark but three or four—and could explain what the names mean. Each of them has its significance; each of the streams had its Indian associations, its stories of hunting and fishing, its legends of warfare and witchcraft—for the Indians of the lower Koyukuk were noted for turbulence and for mighty men of magic. But the Indians are gone, and with them are gone all the associations of their haunts and their history, save such fragments as this learned and industrious philologist has taken from the lips of old men and old women ere they made their last journey.

The chief impression which the region will leave upon the visitor is its loneliness. More than once I have journeyed three hundred miles up this river without seeing a living soul, white or native. At rare intervals are a few dilapidated moss-covered cabins, here and there a little group of overgrown graves; the rest is the wilderness untouched. All day long the boat ploughs the water, round this bend to the left and round that bend to the right, amid numerous islands and innumerable piles of bleaching driftwood, driftwood that the next freshet will transport one more stage on its long, slow journey to the sea. After fifteen hours' running we tie up for the night, though since there is little or no night it were better to say that we run for fifteen hours

THE "PELICAN" NEAR THE MOUTH OF THE KOYUKUK.

ESKIMOS ON THE RIVER SHORTLY AFTER THE BREAK-UP.

and tie up for nine. If we are fortunate we tie up against a sand-bar and are glad of the chance to stretch our legs, for the cabin is confining; if we must tie up to the bank the brush denies us any exercise. And the next day, and the next, is just the same, a bend to the right, a bend to the left, islands, driftwood, banks densely thicketed—and not a living soul. I wish I could convey to the reader something of the strong feeling of loneliness which this river always leaves upon me. It is not merely that the banks are deserted; one knows that the whole country through which it flows, as far to the east as one might choose to go, as far to the west as the salt water, is without inhabitant. I know a man who was cutting steamboat wood on a contract, about two hundred and fifty miles above the mouth, and from September when he went to his post until late in May when he came out he did not see a living soul. And all that winter through, though he had a lamp he had no oil and not more than a dozen candles. He hailed the *Pelican* as we went up that fall and asked for kerosene, but we had none to give him. Is it any wonder that many men become insane every year in Alaska?

Nor does animal life make up in any considerable degree for the absence of human beings; the little brethren of the wilderness are scarce; rarely does a beaver or a muskrat, a marten, or a mink ripple the eddies; rarely does a fox or a lynx prowl along the shore. I have never seen a bear break through the brush, or a mother moose with a yearling at her side stretch her ungainly head to the water along this lower river; the birds are very

few. Save for the sighing of the wind or the hoarse note of a raven the river is silent.

It was in one of these lonely reaches of the lower Koyukuk in the fall of 1912 that the "Blueberry Kid" is thought to have murdered "Fiddler John" (the discoverer of gold on the Hammond River) and "Dutch Marie," a notorious woman from Nolan, both going outside with "home stakes" from their respective occupations, and Frank Adams, whose death was necessary to the robbery and murder of the others. The last steamboat was gone from Bettles, and the Blueberry Kid took them as passengers for Nulato on his launch, the miner and the prostitute both drunk when they embarked. He alone reached Nulato, took a steamboat to St. Michael and so "outside," and in Seattle it is said cashed thousands of dollars' worth of gold-dust at the mint, and again in San Francisco. The launch was found two years later, swamped in a backwater but still *tied* to a tree—the Blueberry Kid having arrived at Nulato in a collapsible canvas boat he carried on the launch. Two years later somebody found a little heap of calcined bones at an old camp site near the submerged launch, but I do not think that any effort was made to determine if they were human remains or not, and the Blueberry Kid is still at large.

Years before in this same region a lone Indian killed a white man who had taken his wife away from him—and then hanged himself. I made a memorandum of the names and the circumstances once, but I cannot find it, and I have forgotten them. One of my old diaries

with its jottings down of all sorts of things that have interested me on my journeys has disappeared.

So the lower Koyukuk leaves as its dominant impression a deep sense of monotonous loneliness, which the recollection of these sinister associations and vague rumours of other almost-forgotten crimes do but intensify. The river is the highway to an old and not unimportant mining-camp; its waters are furrowed by steamboats and lesser craft, but the stretch of desolate wilderness they pass through is very long and the boats' journeys very infrequent. Four sailings in the summer is the usual schedule.

Yet I have seen this region teeming with life for a brief season while the migratory water-fowl were on their journey to the Arctic coast, and we were coming down, following the ice as it went out in the last week of May, when we had wintered the launch on this river. Spring was almost violently arrived, as is its wont in the north, and its warm hand was forceful on all living things. The tender greens, growing almost visibly, were grateful to eyes that still smarted with the long glare of the sun upon the snow, the sight and sound of flowing water gave pleasure, and never, save in the lagoons of the Gulf of Mexico, have I seen such abundant bird life as swarmed in these solitary reaches of the Koyukuk. Flocks of swans and geese which were but resting awhile upon these newly liberated waters; flocks of ducks, most of whom also intended further travel, rose as we approached, circled about our heads, and swept on with honk and cackle up-stream; loons and divers of several

varieties disappeared and rose again. In the twilight of our spring midnight we caught up with the ice and had to halt, and the cries of all these creatures filled the air while we lay at rest. Grouse drummed to one another across the river like the distant explosions of a gas-engine that will not muffle its exhaust; every few minutes a certain species of snipe ran its mating-call up and down the scale with a *portamento* like a siren horn or that dreadful Hawaiian "hula-hula." Underneath all other sounds pulsed persistently the rythmical croak of multitudinous frogs, resolved that what musical effect soever might be lost in this gladsome orchestra, *tempo* should be preserved. At one place, where a band of Indians from the mouth had come up for the fowling, the most natural-looking decoy geese that I have ever seen floated in front of a brush pile that screened the camp. They were whittled out of wood with a pocket-knife and painted, and already they had brought a rich harvest.

Comparatively few of these migratory birds, however, breed on the lower Koyukuk, and in July and August and September it presents on the whole the lonely deserted appearance some suggestion of which I have endeavoured to convey.

About two hundred and fifty miles from the mouth, shortly after passing the largest of the deserted villages spoken of (and it small enough), we break the monotony of the journey by taking the "cut-off"—if the stage of water be good—which saves us twenty-five miles or so. About the same time we come in sight of the Hogatzakaket Mountains and the windings of the "cut-off"

IN THE CUT-OFF. HOGATZAKAKET MOUNTAINS IN THE DISTANCE.

give us them first on the starboard and then on the port, now dead ahead and now almost astern. They form a shapely group, very welcome after the weary lowlands, and an earnest of plenty of mountains by and by. For all our two hundred and fifty miles of travel we have made not much more than a degree of latitude, so sinuous was the course, so often did it leave its main direction.

It takes the *Pelican* full five hours to traverse the "cut-off" going up, and a little less than two hours going down—the sum of these times is, say, seven hours, and half of seven is three and a half, which is very roughly the time she would take were there no current at all. Since she is making better than eight miles with the six hundred and forty revolutions per minute we keep her at, I should estimate the length of the "cut-off" at about thirty miles; if it really saves twenty miles it is a good gain in that distance.

The current has now increased considerably and will continue to increase steadily as we proceed, and when we enter the main stream again a little below the Hogatzakaket no one would call the Koyukuk water slack.

The Hogatzátna, confluent on the right bank, which the maps corrupt to Hogatza and the white men curtail to the Hog River, is the most considerable tributary the Koyukuk has yet received—Hogátzakáket or Hogátzacháket is its mouth; the native speech of these parts being the same as that of the middle Yukon. The Hogatzakaket is reckoned at some three hundred miles from the Yukon, and lies just on the 66th parallel of latitude,

though after touching it the river bends to the southeast again and does not definitely cross it for another twenty-five miles. The Hogatzatna has tributaries that interlock with tributaries of the Kobuk, and affords a route to Kotzebue Sound and the Arctic Ocean.

It was when we had been tied up near Hogatzakaket one night that the boy in the engine-room, rising in the morning before the rest of us to get the boat under way, saw a sight I would have given a good deal to see. A large eagle that had been perched upon a tree swooped down into the water, seized a salmon in its talons, and rose with it, flying off to a height of rock where it probably had its nest. His excited description of the plunge into the stream, the beating of the bird's wings upon the water as it emerged with its prey, the struggles of the great fish as the bird rose, the flashing of its dripping silver scales in the sunshine as it twisted and squirmed, the tremendous effort the bird had to put forth to bear it aloft, made us all envious of the good fortune of the early riser.

Sometimes upon reflection one is surprised at the rareness with which the common sights of the wilderness are seen. This, for instance, must be a common thing, almost always accomplished in much the same way with accompaniment of splashing and disturbance, yet I think few have ever seen it. After ten winters spent almost wholly in travel over the trail in all parts of the interior, I have never seen a live wolf, though I have often seen the carcass of a caribou which had been partially devoured by wolves, and have been kept awake by their howl-

ing. And I know at least one full-grown Indian, hunter and trapper from boyhood, who has never seen a live wolf save in a trap. The same is true in even greater degree of the wolverine, the most destructive and most crafty of all our predaceous animals—and the most hated in consequence. It is somewhat less remarkable, however, that prowlers of the night should be so rarely observed than that the great diurnal bird of prey which subsists largely on fish in the summer should be able to conceal his operations so closely. I have seen bears catching fish, a lynx and a fox catching fish, I have seen dogs catching fish, I have seen the remains of a fish that an eagle had devoured, but the swoop of the eagle into the water I have never seen, and I would rather see it once than have dead specimens of all the varieties of eagles in the world carefully stuffed and mounted. Live creatures of all kinds have intense interest for me, but when they are dead they have very little; and certainly a well-painted picture of an eagle or a well-carved figure gives me much more pleasure than the poor actual bones and feathers, however artfully wired and glued together and provided with glass eyes, varnished claws, and a belly full of sawdust.

There was much discussion of the incident. I thought that little more than the talons of the eagle could have entered the water and that the fish must have been seized in the swoop as I have seen a tame owl seize a rat, without pause in flight, but Arthur declared that the bird went down under the water to get the fish, and described the strenuous flappings that were neces-

sary for him to rise again. The boy was surprised and excited, however, and it was some little distance off, and I still think that the eagle must have descended with closed wings, opening them out when he reached the surface and his claws had grasped the fish, and that the momentum of the original swoop must have sufficed to lift bird and fish a little into the air again. The tips of the wings would doubtless beat the water violently ere a fresh start with even a ten-pound burden was made good—and Arthur thought the fish would weigh much more. It is only in a clear-water river, like the Koyukuk, that such fishing is possible, so that the very condition that saves the salmon from the fish-wheel exposes him to other dangers.

The second stage of the ascent of the Koyukuk, upon which we are now entered, brings us more varied and sightly scenery. The banks are often rocky and picturesque, the prospects are wider and more open, mountains begin to appear in the distance and the timber is better than in the close-set forests below.

The stretch of river for twenty-five miles above Hogatzakaket is vivid to me with memories of the *Pelican's* first cruise in 1908. Here we lay the night before the last day, and a most lurid sunset shining through driving snow was ominous of what was in store for us. Round these bends we struggled against a blizzard, only to bring the cruise to an end, one hundred and twenty-five or one hundred and thirty-five miles short of our destination. Here is the little creek, called on the sailing chart "Valley Ditch," which marked the conclusion

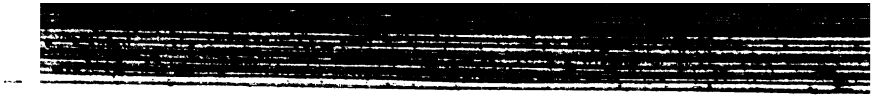
of the voyage, off which we lay when we woke up on the 23d of September to find ourselves frozen in, and into which we warped the launch laboriously with a "Spanish windlass" and made her snug for the winter when it became evident that we could not hope to proceed. Beside it is Martin Nelson's little hut that we helped him build, and there is the cache on which we stored the freight and gear. And ahead of us for one hundred and twenty-five or one hundred and thirty miles wind the reaches of the river, over the "first ice" of which we pulled a sled "by the back of the neck" at all sorts of hazard two weeks later, as I have described in another book.

Twenty miles or so farther comes in the Batzátna, and near it on the map I am using just now is boldly imprinted "Huggins Island," which brings Lieutenant Allen on the scene again and opens a whole new chapter of Koyukuk history and geography to those who care to pursue it. We met Lieutenant Allen on the Tanana River, and the reader will recall that remarkable journey of his, one of the most important and venturesome of the early explorations of the interior, which gave the world the first definite knowledge of the greater part of the two largest tributaries of the Alaskan Yukon. But I had better reserve him till we reach the point where he first reached the Koyukuk.

I have mentioned him here because we are approaching a place where a few years ago the white men started a town which they called Hughes City, now already deserted. Gold was found on a creek tributary to a stream called Indian River, confluent on the east bank, and

a small camp was started and this town was its depot and port while the diggings yielded. Allen in 1885 deemed himself the first white man that had ever been on this part of the Koyukuk, a matter in which explorers sometimes delude themselves, but the pioneer prospector was before him, if a tradition amongst the old-time white men be true, and Hughes Bar in this vicinity is the site of the first gold-working on the river and was named for a man who, it is said, came up a year before Allen. I have no means of determining the matter nor do I think such means exist to-day, and it is of no importance. I mention it merely as a tradition on the Koyukuk. The town, which dates from 1910, should have been named in honour of this man, but as a matter of fact it was named for the then governor of the State of New York. It does not really detract from the honour of exploration that some one else has already passed through the region explored, and it may safely be said that there are very few parts of the interior that were not visited by prospectors before they were visited by any one else. These men made no maps and left no records; the world was not the wiser for their wanderings; only now and then does evidence of their visits crop up. Old prospectors themselves have told me that upon reaching some remote creek into which they imagined "they were the first that ever burst" perhaps a rusty fragment of iron implement, an almost obliterated yet quite unmistakable disturbance of the surface, or weathered axe-mark upon a tree, would bear mute conclusive witness to the priority of others. In this Indian

A NATIVE ENCAMPMENT ON THE KOYUKUK RIVER.



River camp behind Hughes City the miners say they found signs of earlier working, quite forgotten even of miners' tradition.

The life of Hughes City was brief even for a placer-mining town. Started in 1910, it was almost deserted in 1915, though in 1917 a little store still languishes; presently the natives attracted hither will return to their old haunts with some half-breed children and some chronic diseases, and the wilderness will resume its own.

Ten miles or so above Hughes City one of the first real difficulties of Koyukuk navigation is encountered. At the lower end of an island which divides the stream there is a sharp declivity in its bed which at the same time turns at almost a right angle, so that for a short distance there is a veritable rapid, in the midst of which it is necessary to swing the boat half round. This bad water is known by the expressive name of "The Measly Chute."

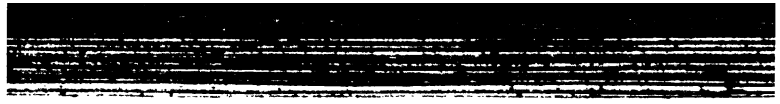
The next point of interest is Red Mountain, a bare-topped bluff described by its name, which serves as a landmark. For some distance past we have met small groups of natives camped upon the bank fishing with nets. The Koyukuk is not a good salmon river, nor is the country a good game or fur country, and its natives are sometimes hard pressed for a living. They know the *Pelican* and hail us as we pass, and we stop and shake hands and greet them and have a little conversation and a short service, pleased with their warm welcome. Perhaps there is a new baby and then the vestments are got out and there is an al-fresco christening with a few words about the

nurture of the child; perhaps some one is sick, and if it be a simple ailment a remedy is administered and some advice given. The tents and the racks of red salmon give brightness and variety to the bank.

And now we come to the Kornuchaket, the mouth of the Kornutna, miswritten on the maps "Kornuti," known amongst the whites as Old Man Creek, tributary from the east. The Kornutna draws its headwaters from a high basin where the Dall, certain branches of the Melozitna and of the South Fork of the Koyukuk all have their rise, and it has long afforded a means of reaching the upper, without traversing the lower, Koyukuk. By the course the *Pelican* has followed from the town of Tanana to this point a distance of nearly six hundred and fifty miles has been travelled; by the winter trail across country it is no more than one hundred and twenty miles.

It was at this point, and virtually by this route, that Lieutenant Allen reached the river on his pioneer exploration. Leaving the Yukon a few miles below Tanana, with one soldier and a party of guides and packers, he pursued the ridge between the Tozitna and Melozitna Rivers, crossing tributaries of the one and the other until the height of land between Yukon and Koyukuk waters was reached; then over flats and swamps and around lakes (fifty-five lakes were counted from one vantage-ground) he passed to a tributary of the Kornutna and so to that stream and the upper Koyukuk, making the journey from Tanana to Kornuchaket with remarkable expedition in six and a half days. It takes

A BAPTISM ON THE RIVER BANK.



four and a half days over the winter mail trail with a dog team.

Taking canoes, Allen went up the Koyukuk as far as the present town of Bettles and thence descended the river to its mouth, mapping its course and naming a number of islands, of which Huggins Island, by some strange chance, has found its way to modern maps, while almost all the other names are forgotten.

Honouring friends by naming islands on the lower Koyukuk after them reminds one a little of the "Belgica" people, who, in default of land, are said to have named icebergs after the contributors to their singular Antarctic expedition of twenty years ago,* on which expedition, as one gathers from Jean Charcot, the notorious pseudodiscoverer of the north pole, Doctor Cook, first began "to stray outside the bounds of honest observation."

A map-engraver loves symmetry; if it be wilderness that he is mapping he is willing to leave open spaces provided they be distributed with reasonable regularity. Here, he will say, is too large an emptiness which a little script would relieve; so a name of some sort is hunted for in the field-notes or on the sketch, and Huggins goes down to posterity while Waite and Treat and Howard and Stout are forgotten. The irony of it is that Huggins is precisely the one of the whole group who needs no such "frail memorial." Brigadier-general in the United States army, thrice wounded at Chicka-

* "The Voyage of the *Why Not?* in the Antarctic," p. 109. Hodder and Stoughton.

mauga, awarded the congressional medal for gallantry in the war against the Sioux, nor without claim to the laurels of Apollo as well as of Mars (I gather it from my "Who's Who"), he still lives full of years and honours. But for aught I know General Huggins may value his island in the Koyukuk as highly as any of his distinctions as a memento of General Allen's early friendship—for our exploring lieutenant is now a brigadier also.

Above the Kornuchaket begins that region of the river which was so plentifully besprinkled with names fourteen or fifteen years after Allen's visit, when the gold stampede to the Koyukuk took place, names that still remain on most maps, though they have been removed from the official maps. We pass one of these on the east bank within a few miles. It was the site of the most considerable native village on the river ten years ago, and a road-house and store turned it from "Moses' Village" to "Arctic City" when the mail trail from Tanana reached the Koyukuk at that point, but store and road-house and Indians are alike gone some twelve miles up and the place is quite deserted. We will leave the stampede names for a while, noting only Bergman, two or three miles farther up, on the opposite bank, where the river makes a decided bend and where the Northern Commercial Company had a store and dwellings, no vestige of which I could any longer see when last I went up the river. Bergman, named for a steamboat captain, lay just on the Arctic circle, but the river turns to the east again and winds about for ten miles with very little northing, so that at the Allakaket, which we now approach,

we are only two or three miles within the technical Arctic regions.

The Allakaket is, of course, the mouth of the Alatna, which comes in from the west and affords the readiest and most-used avenue of travel to the Kobuk River and Kotzebue Sound. Two miles below its mouth is a little village of Eskimos, or "Malemutes" as the Indians call them, from the Kobuk, with the "Malemute Riffle," another well-known difficulty of steamboat navigation, lying in front of it. The range of hills which the river left when it veered to the east at Bergman it here returns to, and right opposite the mouth of the Alatna is the mission of St.-John-in-the-Wilderness, with the principal native village of the Koyukuk now clustering around it. The log buildings of the mission, the church with its gilded cross, the schoolhouse, the dwelling, make a modest and pretty group, as though growing out of the spruce forest by which it is still surrounded. The native cabins have an unusually substantial appearance, the gardens and, at the mission dwelling, even a greenhouse for the early propagation of vegetables give evidence of care and progress, and the whole scene forms a pleasant and grateful contrast to the rugged wilderness that has so long filled our vision.

The *Pelican* comes round the bend, all flags flying, and the siren, like Mulvaney's elephant, "thrumpetin' vainglorious" at the completion of her journey, for this is as far up the Koyukuk as the launch has ever gone.

The records of this mission, now in the tenth year of its activity, give sufficient evidence of what may be done

with the Alaskan Indians under circumstances of favourable moral environment. I say moral environment because there is nothing very favourable to Indian life about the physical environment. The Koyukuk is not a good Indian river. As far back as Allen's day it is noted as a poor country, affording a very scant subsistence. Says he of the Koyukuk natives, with reference to the warlike reputation that had attached to them ever since the Nulato massacre: "Those living on the upper part of the river are too poverty-stricken and miserable to attempt anything that would not assist them in obtaining food or clothing." And again: "The existence of a people living under such adverse circumstances cannot be of long duration."

I may be allowed to say in passing that not only is Allen's journey memorable for its boldness and success, for the extent of new country that it made known, but that the narrative of it is pleasant reading for the humanity which he displays towards the native peoples he met. The accounts of the early military explorations, gathered into one volume and issued by Congress in 1900,* are all of interest to those who know the country they describe, but in reading some of them one grows a little contemptuous of strategic recommendations touching "possible operations" against handfuls of ragged Indians; Indians upon whose kindliness and compassion more than one of these sons of Mars came to depend in the face of starvation before he was done with his journey. Although Allen also was despatched upon a "mili-

*Compilation of Narratives of Exploration in Alaska, 1900.

tary reconnoissance," he does not burden his pages with plans of campaign against fish camps, but grasps at once the fact that from any military point of view the natives of interior Alaska were utterly negligible. Allen has his errors just as Dall has, but of all the military explorers he alone is not unworthy of mention with Dall.

The Koyukuk is not a good Indian country. Game animals and fur-bearing animals are alike scarce, and compared with the Yukon, fish is not plentiful; while the freight rates to its upper waters are so high that "white man's grub" is much more expensive than on the Yukon. So the native people must always work hard to secure a scanty living. Fish is the main dependence, and in 1909 when a partial failure of the previous summer's fishing was followed by one of the periodic disappearances of rabbits, the situation passed the handling of the recently established mission and an appeal had to be made to the government to come to the rescue with relief work—the one instance in which this has been necessary within my knowledge of interior Alaska, and I think within its history. I take pleasure in recording that so soon as the pressing need became known the aid was promptly forthcoming through the channel of the Bureau of Education. The amount actually expended did not, I think, exceed five hundred dollars, but it averted acute distress and even saved lives at a pinch when the mission was stripped to the bone and could procure no further supplies.

The occupation of the river two hundred miles farther up by the white men of the mining-camp affords some

opportunity to the natives of earning a little money by freighting with their dogs, cutting wood for steamboats, snowshoe-making, and similar services; but the wandering and more enterprising Kobuk Eskimos secure the most of this work, and it remains a hard country for Indians to make a living in. It is, of course, easy to talk of removing them bodily to some better district, but the difficulties are great if not insuperable, nor does one regard with complacency the complete depopulation of so large an area, sparsely peopled as it is to-day; rather the efforts of the mission are in the direction of urging and aiding the natives to make the most of its meagre resources.

Here I would like to introduce an excursus on rabbits, for the world at large does not realise what Alaska owes to this prolific rodent. Just as the American buffalo is, or was, a bison, so I know that the snowshoe rabbit is a hare; but it never troubles me when the vast and blessed inertia of common usage disdains the petty efforts of scientific accuracy. I have watched with amusement for many years, for instance, the indignant denunciations of the Fahrenheit thermometer by the Centigrade; and there is little or nothing that the Fahrenheit can say in reply; yet if I were looking for a "safe bet" I would wager that for generations to come water will freeze at 32 degrees and boil at 212. After all, what more is there in names of animals or standards of measurement than convenience?—and if the common world find it more convenient to adhere to an old standard

which it comprehends rather than adopt a new one which it does not—that is the common world's privilege. The measurement of heat, if it did not first become possible, at first became general by Fahrenheit's instrument; it serves its purpose as well to-day as it did then; its readings are instantly comprehended because they refer to a standard generally familiar, and the common world is not troubled about what I have seen described as "the reproach, even the obloquy, of its zero point."

But my excursus on rabbits must not become an excursus on thermometers, so let us return to our rodents.

In setting down the chief sources of the subsistence which interior Alaska affords, next in importance to the salmon must come the rabbit. At times and in places the moose and the caribou, to say nothing of the black and the brown bear or the mountain-sheep, are plentiful; at times and in places enormous quantities of such meat are secured and consumed. But at other times and places no big game will be found at all. And it is often just when a man is dependent on the country that the big game fails him. Sir John Franklin's men starved to death in a region that teems with musk-ox and caribou at certain seasons of certain years. But, with an exception which will be noted presently the rabbit never fails, and is found of one species or another throughout the whole country even to the shores of the northern ocean. Moose and caribou hunting, not to mention bear hunting, require strength and skill, but even a child can pro-

cure a rabbit—small Indian boys kill numbers of them with arrows—and the phrase used amongst the Indians to describe the last extremity of female decrepitude means "too old to snare rabbits."

The rabbit has been just as valuable to the white man as to the native. I think there might have been actual starvation in the first winter of the Fairbanks camp and again in the first winter of the Iditarod camp but for the rabbits; and many a prospector has eked out an "outfit" with rabbits that would not have sufficed for his living without them. I know of a Swede who lived for a whole winter on straight rabbit while prospecting a claim in the Koyukuk camp.

Although this digression is confined to rabbits, I may add that there is another common rodent, more succulent than the rabbit, that has saved many a man from starvation in the northern wilderness—the porcupine. He is even more easily caught, for, secure in his defensive armament, he makes no attempt to flee and a stout stick will kill him; but though common he cannot compare in numbers with the rabbit. The rabbit's numbers are indeed at times prodigious. Sometimes the sloughs of the Yukon are crisscrossed for miles together with their tracks, and the dense willow shoots along the same distance completely denuded of bark as high as a rabbit's teeth can reach when he is standing on his hind legs—as regular and evenly marked a belt as an inundation leaves behind it, and much more striking. The rabbits increase and multiply all over the land for a period of years—commonly, I believe, seven, and then, almost at a stroke,

they are gone. Whether it be that their numbers become at last too great for the amount of food which the country provides them or that they upset some other careful balance of nature I know not, but a rapidly fatal, contagious disease appears amongst them and they simply disappear. The year when this is written (1917) there are no rabbits in the country. In almost continual travel during the first three months of the year not more than ten or a dozen were seen. By and by they will begin to return; they will not be plentiful next winter probably, but by the next they will be numerous enough, and the cycle will repeat itself.

Beside his direct food value and the value of his skin (which, especially when quilted between blankets, makes very warm bedding), the rabbit has other importance. For our poor bunny is the chief dependence of all the predatory animals and birds in the country. Hand in hand with the increase in the rabbits goes usually the increase in the lynxes. This past winter the lynxes have been devouring one another; the skins brought to the traders are all of full-grown large animals; the kittens and undersized animals have all been eaten; and many a man going to his traps has found but the leg of a lynx —a free animal having devoured a captive. So next winter there will be very few lynxes. The fox, the marten, the ermine, the wolverine—all these fur-bearing animals are dependent chiefly upon rabbits, and furs are our only export besides gold. How hard pushed the foxes were this winter was evident from the many places on the trails where they had been at great pains to dig

out field-mice from their little burrows in the frozen earth —I think foxes do not usually trouble with such "small deer."

The rabbit is also the chief dependence of the predatory birds. It does not take an eagle or even a hawk to kill a rabbit. Poor bunny is the most defenceless creature in the world, and anything that has wings to pounce on him with and claws and beak to tear him with, makes a meal off him.

I disturbed an impudent little screech-owl that I am sure was not six inches high, a veritable Tom Thumb of an owl, in the midst of such a meal last winter, and he rose with angry snappings of his beak to a near-by tree and sat till my departure permitted the resumption of his repast. And the scene held such an interesting snow-print of just what had occurred that I detained him from his dinner to trace it out. The rabbit was running across an open place when the bird struck. He struck, not with the beak as I had supposed, but with the shoulder of the wing, and there on the snow was the delicate impress of every feather of that outspread wing. The rabbit was knocked over, but the bird must have failed to seize him; here were further leaps across the snow; the brush where he would be safe was only a few jumps ahead; but the bird was at him again with another stroke, leaving another beautiful intaglio of a wing on the snow, and this time the beak and claws must have secured a hold, for there was blood. For two or three feet there were all the marks of a rough-and-tumble struggle, and right on the edge of the brush lay the

torn carcass, from which the owl had sullenly arisen as we approached.

Let me, in concluding this digression, tell of a similar incident in which the tables were completely turned upon a much larger and more powerful bird—the great horned owl, common in Alaska, and, I think, everywhere else. Seeing what he thought a rabbit at the foot of a tree hard by a cabin in the dusk of a winter evening, the owl made his customary noiseless swoop—and caught a tartar; for it was a full-grown white cat belonging to the man who lived in the cabin. Aroused by the noise, the man ran out, and he said that he never saw fur and feathers fly so fast and furiously in his life before. At last the cat managed to turn on his back although the owl's talons were fixed in him, and with the claws of his hind legs ripped open the owl's belly and disembowelled him, and I saw the skin and what was left of the feathers nailed to the cabin door. The cat's injuries were severe, but when I saw him he was completely recovered and bore no trace of the fight.

The observation of animals is not infrequently mistaken. Here at the Allakaket is a Kobuk boy with a great scar on his face that he will carry as long as he lives. It was made by a wolf when he was a little child, the only instance I recall hearing of in Alaska of a wolf attacking a human being, and the boy's parents were convinced that the wolf seized the child by mistake. He was playing near their hut clad in a long parkee made of mountain-sheep skin with hood and mittens of the same material complete, and they believe the wolf mis-

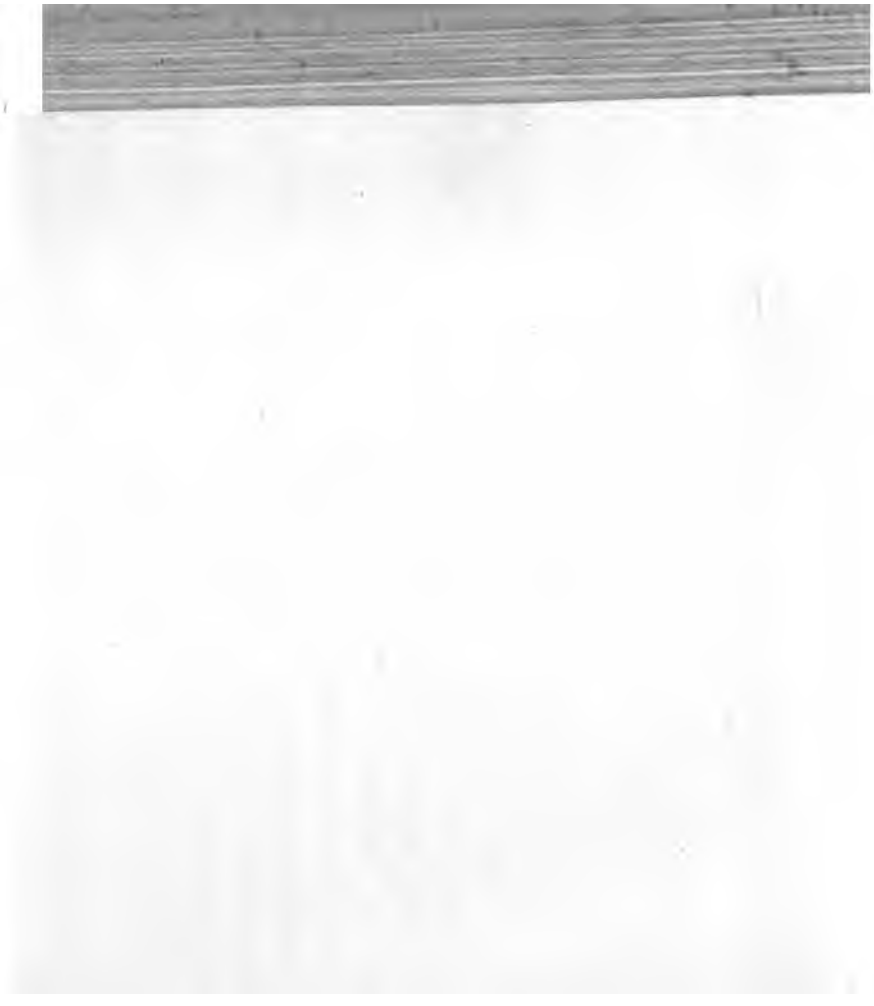
took the child for a lamb. A wonderful sure shot killed the wolf without injuring the child—a piece of marksmanship almost equal to William Tell's.

The danger with an admittedly discursive book is that there is like to be no due control of its divagations. Here have I wandered from rabbits to owls and from owls to wolves and had almost gone off into marksmanship. The rabbits led me further than I intended, but I should like to feel that I have contributed towards a better understanding than has hitherto prevailed "outside" of the part they play in Alaskan economy. If their periodic year of general mortality had not coincided with an unusual scarcity of fish, it had not been necessary to ask help in feeding Indians of the interior of Alaska on the only occasion, to the best of my knowledge, when it has ever been asked.

The wolf did, at any rate, bring me back to the Allakaket, where the mission nurse and the teacher—two lone white women in the Arctic wilderness—and all the native population, are crowded on the bank to welcome the *Pelican*.

It is always a great pleasure to visit this place because its happy isolation from the usual malign influences that hinder work amongst the Indians allows of continuous improvement. The people were dying off before the mission came, now they are steadily increasing. That is positively the first thing to secure, for what inspiration is there in working for a doomed community? The children are far and away the most important people in any community, but in an Indian community

THE MISSION BUILDINGS AT ALLAKAKET.



they are everything, and work for their parents is chiefly necessary because of the parents' influence upon the children. At one of our mission stations where the people are not increasing the man in charge boasted to me that there was not an illegitimate child or a half-breed child in the village. "But there are no children at all!" I cried. And I am afraid I shocked the good man, as I may shock some of my readers, by saying that I much preferred half-breed children or even illegitimate children to no children at all. By the grace of God much may be done with half-breed children and even with illegitimate children, but what, in the name of all that is hopeless and preposterous, can be done with no children at all?

So it delights me to see the Allakaket mission swarming with healthy children, and to know that the death-rate is much below the birth-rate year after year; to go into the schoolroom and see the docile eagerness of many of them, the wide-eyed wonder of the beginnings of an acquaintance with the great world; to gather the folk in the church, Kobuks on one side, Koyukuks on the other, and laboriously by the mouths of two interpreters endeavour the beginnings of their acquaintance with the Greater World. For this is the one mission that I know of anywhere that serves two totally different races, speaking totally different languages, Indians and Eskimos.

A high bluff bank of clay, seamed with gullies and continually weathering in landslides, rises just behind the Eskimo village on the opposite side of the river about a

mile below the mission and is crowned with the crosses and fluttering streamers of Eskimo graves. Allen notes that it bears an Indian name, Unatotly,* and wonders that so comparatively insignificant a feature should receive a distinctive name while high mountain peaks have no designation. The reason is that the rolling plateau above this bank was of old the meeting-place of Eskimos and Indians for trading. Notwithstanding the traditional hostility between the races the exigencies of native commerce demanded some interchange of commodities, and this high open land was chosen as a rendezvous because it afforded no cover for ambuscade. Avoiding the lower Alatna the Kobuks crossed the ridges to this plateau and announced their arrival by signal-fires. To them the Indians repaired, climbing the bluff by the steep gullies, and the vantage of position compensated the Eskimos for the disadvantage of their presence in enemy country. Mutual suspicion and fear are bred of mutual ignorance; of late years the two races dwell harmoniously side by side and there is even some tendency towards intermarriage, which we do not think it wise to encourage.

Yet how real the old fear was, received illustration two or three years ago when an Indian family from the Allakaket, absent in hunting-camp, hearing some foolish mischievous rumour that "the Malemutes are coming," fled hastily to the Yukon and stayed on the Yukon for a couple of years, leaving their cabin and all its contents

* *Nish-thla-tot-li* is the actual name, and it means "the place where the stones roll down."

unvisited behind. And I have seen the village of Nulato on the Yukon deserted on a similar rumour.

If we are at the mission for the Fourth of July, as some years we try to be, there will be sports and contests. The boys and girls and the women will run races; there will be wrestling-bouts for the men; that the elders be not left out, there will be leaping upon a tightly stretched moose hide held by a dozen men for the old women, which they have borrowed from the Eskimos as their special diversion, with a prize for the one who leaps highest —and the agility of these ancient dames is sometimes astonishing; while for the old men there will be a contest in making fire with wooden drills, an art neglected since the introduction of matches. The last time I saw the fire-making the victor caught his smouldering sawdust in the shavings he had ready and blew it to a blaze in two minutes and four seconds from the time the word was given to start twirling the drills.

Allakaket is almost universally corrupted to *Allen*-kaket by the white men of the Koyukuk, and there is a notion amongst those of them who know something of the history of the region that the place was named by Lieutenant Allen in honour of himself—based perhaps on the circumstance that he calls the Alatna the "Allenkaket River." This notion is, of course, ridiculous; but one is curious to know whence he obtained the name. All Allen's rivers are "kakets"; he did not discover that "kaket" means "mouth," but I am sure he never got "Allenkaket" from any native lips, and can only conjecture that he heard the white traders on the Yukon

speak of this tributary of the Koyukuk, and retained, as men will often retain, an original mispronunciation, despite the subsequent hearing of a correct one many times. One judges that the "n" first dropped into the name simply because it is easier of utterance to a white man with the nasal consonant than without it, as "Saint Leger" came to be pronounced "Sille*n*ger" or "Sel-le*n*ger." John Evelyn in his diary writes, "my lady Sellenger," just as, I fancy, Allen wrote "Alle*n*kaket." I am the more confirmed in this conjecture because "chaket" is really the Koyukuk usage; whereas "kaket" prevails on the middle Yukon whence Allen started for the Koyukuk. "Allakaket" established itself on our mission stationery before I was myself sufficiently aware of the local usage. Dall alone, as I think I remarked before, had both eyes and ears.

It is at the Allakaket that the mountains of the Endicott Range, which separates Koyukuk water from the water of the northern slope, first begin to appear in the distance. Looking up the Alatna, some southwestern spurs of the range lift their heads, snow-covered save during the heat of summer, and the most prominent peak from this vantage has received the name of the Young Eagle Mountain.

Forty miles or so of serpentine river in a wide valley, the banks generally low though there are bluffs occasionally where ridges bound the stream, brings us to the mouth of the South Fork, tributary from the east, the largest affluent which the Koyukuk receives on its left bank, and here is another native village of eight or ten

THE FIRE-MAKING CONTEST AT ALLAKAKET.

cabins, the second and last Indian settlement now existing on the Koyukuk. It has at least one distinction; the snowshoes made by the people now are considered the best in Alaska. This place we count a dependency of the mission at the Allakaket, so far as the schooling of the children and the instruction and care of the people are concerned, for they come down usually for a month at Christmas and for the fishing in the summer. Allen found thirteen souls in this neighbourhood. There are now upwards of forty, some of the increase a natural increase of late years, though there has been emigration from other parts of the river. Allen counted two hundred and seventy-six souls as the total population of the Koyukuk, ranging from this point to the mouth, and is confident that his enumeration is much more correct than most Indian censuses. Of these he found the greater part on the lower river, now entirely deserted save for early summer fowling and fishing, as we have seen. Most of these lower Koyukuk people must have withdrawn to form the village on the Yukon just below the Koyukuk mouth, where they preserve the somewhat sinister reputation they gained long ago, for neither Allen nor Stoney mention any village there in 1885. Since we count about one hundred and fifty Indians all told, as attached to St. John's-in-the-Wilderness, including the Hogatzakaket folk, and there must be about one hundred at the Koyukuk mouth when they are all at home, it is probable that there has not been greater diminution than these figures would indicate in the total number of Koyukukans in the past thirty years, while on the upper river in the last ten

years there has been a steady increase. It may be noted in passing that it is, of course, easy to count exactly the number of Indians present at a village on any day one may visit it, but that to give the exact number who *belong* to a given place is not always easy amongst a wandering people. Sometimes a whole family will migrate to the Yukon at Tanana, remain there for two or three years and then return—or they may not return at all.

Because the author finds his Indians of inexhaustible interest it does not follow that the reader will; there may be those who will be glad to learn that we are done with Indians for the remainder of the Koyukuk River.

For here at the South Fork we begin to approach the domain of the miner, which is the domain of the white man. It was to this region of the river that the "rush" of 1898 reached. Ocean vessels arriving at St. Michael full of men on their way to the Klondike, learned at the same time of the overcrowded condition of that camp and of a new "strike" on the Koyukuk; and river-craft of all kinds, knocked-down boats brought thither on the ocean-going vessels, boats newly constructed at the port, boats that had braved the perils of the ocean passage under their own power, turned aside from the journey up the Yukon and ascended the Koyukuk. Some got no farther than the neighbourhood of Bergman, some went a little way up the Alatna, but most of them reached the mouth of the South Fork, above which the difficulties of navigation greatly increase; some went a little way up the South Fork, some a little farther up the main river, and

at this point or that, at the limit of their draught on the falling waters, tied up and froze in for the winter. It is said that upwards of fifty steamboats all told and nearly a thousand men wintered in this region that year.

Where they tied up mattered not at all; there was little or no attempt at mining or even prospecting, and next summer all that extricated themselves from the ice at the break-up went down the river again. When first I knew the Koyukuk several wrecks still remained, but I think they are all gone now. They came, they wintered, they went—these Koyukuk stampeders. Some of the men from the boats made their way up to the actual diggings—and some of them are there yet; some came out from the diggings by various overland routes to the Yukon. I remember a cabin on the Dall River, the logs of which bore written comments on the country, the climate, and the trail that would not stand transcription, and from the dates appended I judged that these valedictory compliments were made by bands of "busted" stampeders.

They straggled out by the Dall River to Rampart on the Yukon. One party of three or four having consumed all their food, killed and ate a dog, and they still tell with glee at Rampart of the hot dispute about payment for the same. The owner insisted upon a pro rata contribution from those who had participated in the feast, and was scarce dissuaded from hauling before the magistrate one who insisted that he "wasn't going to pay no ten dollars for a piece of dog leg," which was all he got; "let them as ate the white meat pay for it."

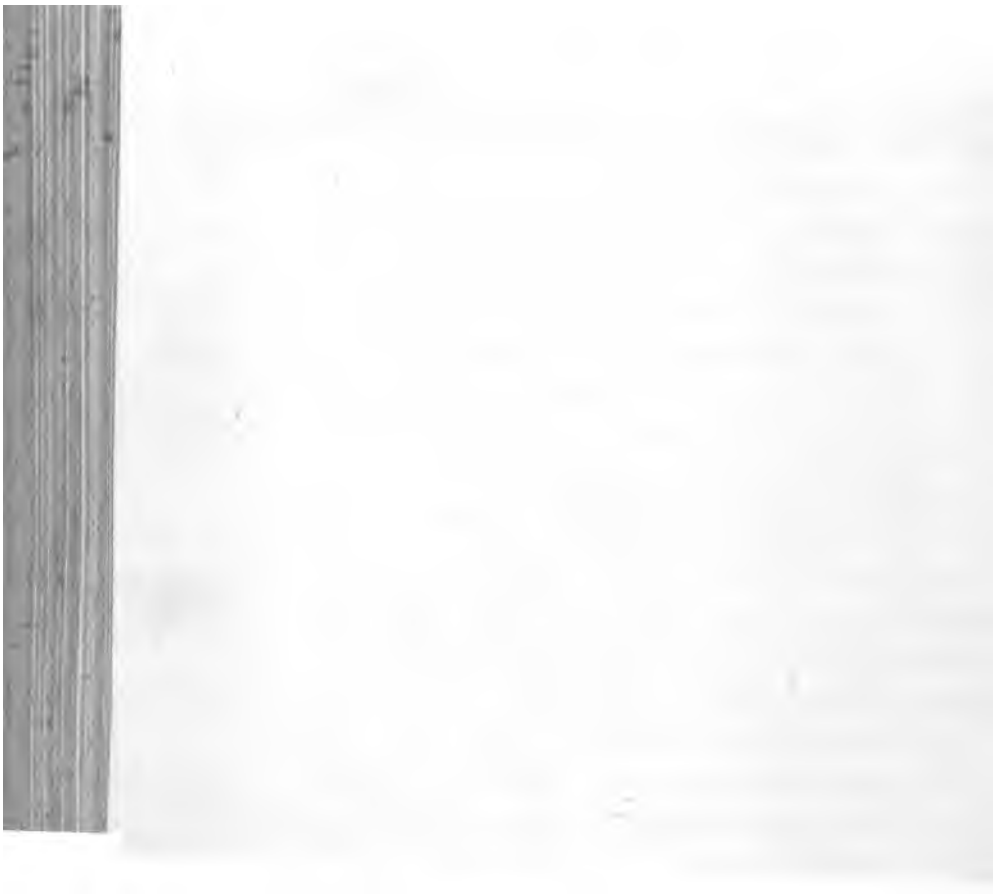
But there are exigencies of the trail, especially with "chechakos" that it is better to draw a curtain upon.

Whenever a steamboat tied up a few cabins were built on the bank for the boat's company. One boat that struggled up the main river above the mouth of the South Fork happened to have some sort of official from the General Land Office on board, and he laid out a town site with church and school and court-house, with First Avenue and Second Avenue and so forth. The town was named Peavey, and blue-prints of it were made that looked quite imposing. One of the boats that went up the South Fork had a dynamo on board, and the town built by its company was lit by electric lights that winter.

When the Land Office man returned to Washington he carried with him the names and locations of these settlements, and this is how the upper Koyukuk River came to be dotted all over with towns that still appear on most maps, though they had no more than one winter's existence and no possibility of permanence. They have been stricken from the late edition of the government maps. Seaforth, Union City, Jimtown, Soo City, these on the South Fork; Beaver City on the Alatna; Arctic City and Peavey on the main stream, are all in this class; and Bergman which had a little longer existence as a warehouse depot. When last I saw Peavey some years ago the superincumbent snow of a winter had crushed the two remaining cabins to the ground.

We now draw to the end of the navigable Koyukuk, for Bettles, between forty and fifty miles above the

INDIANS COMING TO THE MISSION.



South Fork, is the head of steamboat navigation. At a low stage of water the boats cannot reach Bettles with any load, and frequently it is necessary for them to double-trip and treble-trip, and even on the last journey of the season, to leave caches behind that cannot be carried up at all. "Dorothy" Slough with its whirlpools at head and foot, the "Crimmins" Bar, the "Badger" Bar with its snags—all named for craft that came to grief—are special difficulties of navigation in this part of the river. The Koyukuk rises and falls with much rapidity; a heavy rain upon its upper basin will give good water for two or three days upon which a boat may easily reach its destination; but if this be missed a long wait may be necessary ere another opportunity serve, or much laborious relaying and warping over bars must be resorted to. The steamboats employed were specially designed and built for this work; of very light construction, drawing only a few inches of water, they are provided with powerful engines and unusually strong steam capstans and winches and similar tackle.

On a clear bright day the visitor approaching Bettles will enjoy the sight of the long range of the Endicott Mountains stretching like a wall from east to west, as though to bar any farther advance. Their sharp rocky peaks carry snow well into the summer, though no point of them passes the line of perpetual snow and there are therefore no glaciers. They bear the same general appearance which gave the name "Rocky Mountains" to the western sierra of the United States, and the visitor should remember that they are in fact a part of

that same range; for when that range in its northern extension reaches about the 68th parallel of latitude it turns at right angles to the west, and stretches all across northern Alaska as we see it stretching here, forming the watershed between the interior drainage to the Yukon and the drainage direct into the northern ocean. It gives one some conception of the grand scale upon which the North American continent is laid out to realise that these finely sculptured, jagged peaks are part of the same continuous mountain range as the peaks of Colorado.

Did any one who retains any vivacity of imagination ever gaze at such a barrier range as this without longing to know what is on the other side?—without being possessed by at least a momentary desire to cross it and see? Kipling, who has voiced so many of the commonly inarticulate desires of the human mind has put some suggestion of this feeling once and again into his verse, and many lesser men, including our own northern poet, Robert Service, have taken the suggestion for a text and have exceedingly amplified it if they have not much further elucidated it.

The feeling is not the same as that aroused by some great, isolated, or dominating uplift; in that case the appeal is, I think, much less universal, and the lure lingers upon the height itself and urges to the attainment thereof, urges entrance upon its lofty and remote recesses hitherto reserved from the foot of man. But the challenge of a long level range is precisely the challenge of a wall, and I have had the same feeling when passing by the high enclosing masonry of the garden of a

Roman palace. It makes little matter what is behind; whether it be gay parterres and velvet lawns and sparkling marble fountains bedecked with classic statuary, or whether it be merely the Arctic desert. The thing is a concealment and a barrier and that is why it has so general a challenge. We know that this belt of mountains, perhaps fifty or sixty miles wide, has behind it only the great Arctic desert; but it is unseen and different and therefore mysterious. The range marks the virtual limit of timber, on the other side is naught but willow-tufted tundra sloping very slightly and gradually to the polar sea. All who have traversed that plain, from Franklin to Stefansson, describe it as the dreariest waste in the world, swept by merciless blizzards all the winter, and overhung by incredible clouds of venomous insects all the summer.

Long ago in the winter I climbed the Lookout Mountain behind Bettles and looked up the valley of the John River, which seems to cut right through the range as it comes down from the north to its confluence with the Koyukuk at this point, and to present, as in fact it does present, the beginning of the most direct highway to the Arctic coast. And as I gazed upon the rows of sharp, dazzlingly white peaks between which the valley passes, I longed to make that journey, to cross the mountains and get behind them and see for myself that vague, vast expanse of the world, and visit the remote and scattered hyperboreans who dwell upon its icy shore.

Twenty years before Allen had stood on the same elevation ('twas he who named it), in the early part of

August, when the mountains were still snow-covered or perhaps were freshly snow-covered, one-third of their height, and, looking up the same valley, had felt the same enthusiasm for the view, and had entertained, I am sure, the same desire to pursue the pathway it affords. There is a sigh of regret, not, I think, unconnected with that mountain range, in his subsequent reflection that having only a few pounds of flour and bacon left he must leave these farther regions to other explorers. For my part I still cherish the hope and expectation of visiting the Arctic slope and traversing the shore of the ocean that bounds it; but I may circumvent those mountains instead of crossing them, and I shall choose my time when the storms are somewhat spent and the mosquitoes have not yet arrived. The spring is the time for Arctic travel.

The name of the John River is bound up with one of the most striking incidents of the early entry of gold-miners into this part of Alaska, and since it has found its way into inaccurate published accounts, it is here set down from the lips of those who were on the Yukon at the time and themselves not unconnected with it.

When Lieutenant Allen started on his exploring journey in 1885 he picked up an old Scotchman named John Bremner at the mouth of the Copper River. This man became a member of his party and accompanied him to the Tanana and Koyukuk Rivers, leaving the party only when its work of exploration was done and the expedition was returned to the Yukon on its way home. Bremner had been impressed by the upper

Koyukuk country as prospecting ground and remained on the Yukon that he might visit it again. This he did in company with a partner named Johnson in the summer of 1886 and again in the summer of 1887, going to the site of Bettles and ascending the stream that is confluent with the Koyukuk near that point, which Allen called the "Fickett" River, after one of his military command.

On returning from this third visit to the upper Koyukuk, as he was rowing his boat to the bank at Dolmikaket, a native village a little below the cut-off, now abandoned, Bremner was shot and killed by an Indian and his boat and possessions were stolen.

The next summer word of the murder reached the miners assembled at "Nuclayette" on the Yukon, awaiting the trip of the steamboats from St. Michael with their annual supplies, and there was great indignation and a general feeling that the deed must be avenged. John Bremner was an old and kindly man, quiet and inoffensive; those who knew him were confident that he could have given no provocation; if this outrage were unnoticed whose life would be safe? So a plan was made, and when the two boats, the *New Racket* and the *Prospector* came up, the latter was "commandeered," as we would say nowadays, by a party of miners under the leadership of Hank Wright and was taken up the Koyukuk to the village at Dolmikaket. A demand for the surrender of the murderer was complied with, and he was carried down to the Koyukuk mouth and there hanged, and the steamboat was brought back to Nucla-

yette and restored to McQuesten, Harper, and Mayo, the owners.

It were easy to conclude the narrative of this prompt retribution with the lines of Kipling:

> "Then a silence came to the river
> And a hush fell over the shore
> And Bohs that were brave departed
> And Sniders squibbed no more."

I have told of several crimes of the Koyukuk Indians and of their bad repute from the day of the Nulato massacre, yet it would not be just to assume that such bloody and treacherous acts represent common occurrences, since they are, in fact, the only, or almost the only such occurrences in seventy years' intercourse with the whites. Men still living in the country who knew these people thirty years ago, at the time of Bremner's murder, speak of them as gentle and kindly and remarkably honest. Chapman, of Rampart, the discoverer of coarse gold in the Koyukuk at Tramway Bar, between Bettles and Coldfoot, who knew Bremner and his partner, tells me that his caches were never violated, though they often contained articles of the utmost value to the Indians, such as knives, guns, and ammunition, and that in all his long intercourse with them he had nothing but kindness at their hands.

There is no doubt in the case of the murder of Bremner, as in the case of the Nulato massacre, that the crime was instigated by the medicine-men, who wielded almost always the sinister influence in the lives of these Indians, and on the lower river, to some extent, do so yet. But,

aside from that, here is a tribe with, at the most, let us say half a dozen murders to its discredit in as many decades. That hardly warrants a very evil name. It is by contrast with the other Indians of the interior that a bad name has attached itself to the Koyukans, and that bad name, therefore, bears tribute to the gentleness and peaceableness of the aborigines of interior Alaska as a whole.

Johnson, Bremner's partner, constantly referred to the river that Bremner was so much interested in as "Old John's River," and "John River" has become fixed upon the stream to the entire displacement of the name Allen gave it.

Bettles, which is on about the 67th parallel, is the depot for the mining-district which begins here and stretches a farther seventy-five miles up the river. The supplies for the camp, food, fodder, and machinery, brought hither by steamboat, are carried hence by other and slower and more expensive means of transportation to the creeks where there are diggings. Chief amongst them is the horse-scow, a large, flat, double-bottomed bateau, which is propelled by gasolene-engines through the deeper reaches and hauled by the horses over the shallows and the bars, one of its bottoms being scraped and torn off each season and replaced before the next. The point of maximum mining activity varies from year to year, but is commonly at the other end of the district, and the bulk of the supplies are carried from sixty-five to seventy-five miles. The open season always comes to an end before all the freight is removed, and when the

winter is set in, horse-sleds and dog-sleds are used and freighting goes on more or less all the winter over the ice. The employment of horses depends upon the weather and the precipitation. In the last winter (1916–17) the snowfall was so heavy and the spells of cold weather so long that horses could be used very little and ate their heads off several times over in the stables. Winter freighting with dog teams gives employment to a band of eight or ten Kobuks, who, with their families, make Bettles their headquarters, and the white men come and go, so that the place is not without activity winter as well as summer. A new strike on the John River, confluent at Bettles, was still further contributing to the business of the place when last I was there.

The Koyukuk flows roughly parallel with the Endicott Range until Bettles is reached, and there turns from a general westerly to a general southwesterly direction. Turning therefore to the east at Bettles, as we go upstream, we pursue the course of the "Middle Fork" between the Endicott Mountains on the left and the ridge that divides the Middle Fork from the South Fork on the right, with not much scope for tributary drainage, for at places the two forks of the river are only a few miles apart, and the streams that come down from the mountains are little more than mountain torrents. Between Bettles and Coldfoot the North Fork, Wild Creek, and "Twelve Mile" are received and money has been taken out of all three. Great expectations were entertained of Wild Creek a little while since, but they have not been realised.

FREIGHTING ON THE UPPER KOYUKUK.

It will be understood that it is not every gold deposit that will pay for working in a mining-camp where the cost of operation is as great as it is here. Not only is the Koyukuk camp the most northerly in Alaska and perhaps in the world (I do not think the Siberian placers are so far north), but its difficulties of transportation are greater than any other. Even ground that would be counted very rich in other districts may yield but a narrow margin of profit when the balance between receipt and expenditure is struck. By reason of the higher latitude the season is shorter here than in any other Alaskan camp, and the winters are on the average more severe; while the proximity of the mountains causes a heavier snowfall than the Yukon receives.

There is only one limit to the overcoming of physical difficulties in gold-mining, and that is the limit of cost. If sufficiently rich deposits were discovered on the north coast of Greenland or Grant Land, thither the adventurous spirits would flock, nor would three months of total darkness prove any deterrent. If nuggets were brought down from the highest rock-ridge of Denali (Mt. McKinley), from nineteen thousand feet, there would soon be men digging and blasting at that altitude and incidentally teaching the scientific world something fresh about the possibility of human labour under a pressure of half an atmosphere. New conditions would be met by new expedients; cylinders of oxygen might become part of the miner's "outfit," and a two-hour law replace the eight-hour law, but if gold were present in

sufficient quantity to warrant the cost of obtaining it, it would be obtained.

Some of the men who make money in placer-mining go outside with it at once and enter upon some business they have always contemplated with the capital they have secured. Probably all of them have the purpose of returning when they come into the country. I think very few deliberately intend to spend their lives here. But it is commonly true that the man who makes money in one gold-mining venture is easily moved to invest it in another. There is never much difficulty in obtaining the capital to develop a mining-claim that "looks good." And such are the chances inherent in this occupation that all the money taken out of one hole in the ground may very quickly be sunk in another. Good prospects are obtained on a new creek; a hole is laboriously driven to bed-rock and indisputable "pay" is discovered; any one who is interested may go down and "pan" for himself. But in order to work the claim to any advantage, perhaps even to work it at all, machinery must be procured, and a half-interest awaits any one who will provide the money to procure it. So the man who has made money on another creek goes into partnership with the new discoverer, and operations on a substantial scale are undertaken, only to find, perhaps, that the original shaft was sunk on a "pocket" and that no drifting however extensive and expensive will disclose a pay streak. And the man that had a "home stake" and was hesitating between an immediate withdrawal and "one more shot" finds himself working for wages again, or starting off on

a prospecting trip with nothing left after buying his winter's outfit. On the other hand, the venture may succeed, and with increased capital comes the itch to increase it still more; with judgment justified comes a pride of judgment which may lead to a heavier fall. "The most dangerous delusion of the placer-miner," I have heard it said, "is that he can tell what is under the ground from looking at the surface." Yet the very man of whom this was said has gone from success to success until he is now a very wealthy man. Here is an occupation in which sheer luck is the prime factor, and luck runs in strange streaks.

A claim-owner on Nolan Creek gave away one hundred feet of the upper part of his claim and one hundred feet of the lower part to two different men, because the holes they would sink would prospect the remainder of the claim—would locate the pay, if pay they found, and indicate to him where best to sink. Such a deal is not uncommon in placer-mining in deep ground. Both of these men took out "home stakes," but on the remainder of the claim no pay at all has been found.

It must not be supposed, however, that technical skill and business ability play no part in placer-mining. Many a claim, with no large margin between the "clean-up" and the expenses, has driven its owner into bankruptcy through careless and extravagant management, and, on the other hand, many a substantial "home stake" has been gathered from such a claim through skilled operation and careful husbandry.

Some who take their fortunes and go outside after a

number of years in this country find the humdrum routine of business insupportable and return. The cherished desire of many a miner is to buy a "fruit-farm" of some sort in one of the Pacific coast States, or a dairy-farm or a chicken-ranch. A good many such enterprises have been started by men from Alaska, and a good many of them have been abandoned after a few years' trial; and men who had shaken the dust of Alaska off their feet turn up again one summer in the old haunts amongst the old companions, with loud expressions of relief at their escape from the trammels of civilisation.

Because of its isolation and remoteness and difficulty, and the qualities which they evoke, the Koyukuk camp has always been the most interesting in Alaska to me. It is a small camp, averaging perhaps two hundred men, and while much of the population is shifting and immigration and emigration constantly occur, there always remains a substantial proportion of "old Koyukukers" who have worked on one creek or another in the district for a number of years and maintain certain standards and conventions not always to be found elsewhere.

I think some of the best men that Alaska contains are to be found in the Koyukuk, and I will not say that some of the worst are not there also. It is commonly said, and I think with ground, that more whisky is consumed here per capita than in any other community in Alaska and perhaps in the world, and that the cost of it exceeds the whole cost of the food imported into the camp, high as that cost is. Yet at the election in November, 1916, when the voters were called upon to declare their wishes

on the question of the prohibition of alcoholic liquors in the Territory, the vote of the Koyukuk was overwhelmingly "dry."

It is this remarkable circumstance, not confined to the Koyukuk though conspicuous there, the circumstance that the vote for prohibition was so largely the vote of habitual drinkers, that gives me hope about the execution of the "bone-dry" law which Congress has just passed in response to that vote. Here is not a deprivation imposed by exterior power, here is virtually a petition from the users of alcohol praying that they may be deprived of it. Such a vote is the best justification of the prohibition movement. "We like it; if we have the chance we will drink it, but we know it is keeping us poor and ruining body and soul, and we ask that it be taken away and not allowed any more to come in." Total abstinence being thus self-imposed, I do not think there will be the efforts to evade it that I should expect had the measure been otherwise secured. The weight of public sentiment will, I think, be with the prohibition law instead of being against it.

The benefit that will result to Alaska from the thorough execution of this measure is incalculable. At a blow it will remove the chief provocation of crime and lust, the most fertile breeder of thriftlessness and poverty and, if not one of the largest direct causes of disease, certainly the chief exacerbator thereof and hindrance to healing. I think a large proportion of mishaps on the ice and on the water, above ground and underground, are directly referable to it. Our experience at the hos-

pital in Fairbanks led us to believe that three-fourths of all cases of severe frost-bite have liquor behind them.

It will mean new hope for the native people. The denial of liquor to them while permitting it to the white man has always chafed a certain percentage of them as a stigma of inferiority. With the removal of all temptation to intoxication will go the great threat against their survival as a race.

There remains, there cannot but remain, to the man familiar with Alaskan conditions, the great administrative If. Now, that no license fees will be obtainable in the Territory, will the treasury officials interest themselves in hunting out illicit stills? Alaska, it should be remembered, was once before under a congressional prohibition law, and it stands on record to the lasting disgrace of the most cynical department of the United States Government that its officials made their regular rounds and collected their regular fees from liquor-dealers openly defying the law, despite the protests of the governor. Moreover, who that knows the feebleness of our system of magistracy and police can place much confidence in its efforts to enforce any law? With unpaid justices of the peace engaged in small merchandising and timid lest they injure their business, with bibulous deputy marshals such as I have known scheming their own indulgence, who can be without fear that offences against the liquor law will be connived at?

The remoteness and difficulty of the Koyukuk camp have engendered a feeling of comradeship amongst the miners that is not found, I think, in any other camp.

English and Irish and Scotch, Danes and Swedes and Norwegians, French and Germans and Italians, as well as native Americans—they have all become very much American in their sentiments and characteristics and have developed a fellow feeling that makes them sometimes "wondrous kind." I have found not only repeated instances of disinterestedness and generosity to the injured or to the sick or to the unfortunate, but a general public sentiment approving and even requiring such attitude that in its degree seems peculiar to the Koyukuk camp.

Of late a number of Slavs from Austria and the Balkan states have penetrated to this region (as well as to every other in Alaska) and they are known locally by the somewhat disparaging and wholly preposterous name of "Mohawks." My recollection of the Mohawks was that they fought against the colonists in the revolutionary war and I wondered if the name had any implication based upon that circumstance, and asked why they were thus called. But I might have spared the question; there was no "why." "It's just what we call them." Contented with little, they work ground that the "white men" disdain, and are therefore doing no man harm, nor taking money out of others' pockets, and since they also must subsist, however modestly, their presence adds to the commerce of the camp. And they have just as much chance of "striking it rich" as any one else.

Coldfoot, at the mouth of Slate Creek, on the left limit, flourished when Myrtle Creek, a tributary of Slate, was the "chief producer" of the district. It owes its

name to the original intention of its settlers of going farther up the river, an intention which succumbed to difficulty and fatigue—they "got cold feet!" Racy of the climate and of the people, it is a name to be cherished, one of our few settlement names, other than native names, that are neither grandiose nor commonplace; "Anchorage" on Cook's Inlet is another, a happy accidental naming, "Sunrise" on the same Inlet is another, and if the storekeepers had allowed the miner's name to remain we should have "Twilight" in the Iditarod instead of one more "city."

Coldfoot, little more than a way station now, with a road-house and store combined, a number of empty cabins and a very few occupied ones, lies in as picturesque a setting of lofty, jagged mountains as any town I know, but the business has gone from it to Nolan, at the mouth of Wiseman Creek, some fifteen miles farther up, and here the principal stores, the saloon, the post-office, the magistrate and the marshal, will be found; for Nolan Creek, a tributary of Wiseman, is at present the chief producer of the district.

Six miles above Nolan the Hammond River comes in, whence a good deal of gold was taken two or three years since, but at present there is not much mining activity there. Creeks above the Hammond River and creeks between Nolan and Coldfoot have yielded gold, and there is always a number of men scattered in twos and threes here and there throughout the district making a little money by the cruder methods of mining, but the main output of the camp for a number of years past has been

from Nolan Creek and the Hammond River. A little beyond the mouth of the Hammond River (which is no more than a creek) the Koyukuk forks near the 68th parallel into the Bettles and the Dietrich Rivers which are mountain streams quite unnavigable, and seems to pass beyond its auriferous belt.

CHAPTER XI

THE CHAGELUK SLOUGH. THE INNOKO AND IDITAROD RIVERS

TURNING straight across the broad river from H Cross Mission, we enter the Chageluk Slough, and surprised and pleased to find ourselves in clear wa again. Save for the few hundred yards that we tur up the Anvik River, this is the first clear water tha have seen for a long time, and the *Pelican* is glad to it running through her cylinder-jackets and her co system, washing out the mud that, despite all filt and settling, has been deposited.

The Chageluk Slough is an arm of the Yukon that left it forty miles above Anvik to wind far from the main stream and make a great island tw five or thirty miles wide in places by its return a tortuous course of nearly one hundred and fifty Some twenty miles or so after leaving the Yuk slough receives the waters of the Innoko River, in excess of the small stream that it withdrew fr Yukon, and, the Innoko being a clear stream, the itself is clear from that time.

Until the gold discoveries on the Innoko in indeed until the stampede to the Iditarod in 1 Chageluk Slough was little frequented by wh Remote from routes of travel, its native inhabita perhaps the most primitive of all the inhabitan

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irritating to the eyes, but that is the lesser of the two evils.

It was on this occasion that I first saw the inside of a Kazhîme. The mosquitoes were so bad that an outdoor gathering was impossible, and the peculiar institution to which reference has been made in dealing with Anvik was put at my disposal. The Kazhîme is the men's sweat-bath and club-house, the abode of the unmarried men and the entertainment house for visitors. The large cavernous chamber, more than half underground, with a roof rising only slightly above the level of the earth, was entered by a tunnel closed with a rawhide flap. In the midst the fire yet smouldered, its smoke eddying up to the domed roof and there escaping through the only vent in the building. All around were shelves on which nude men were reclining, the sweat-bath just over, their forms dimly visible in the gloom; and beside each man was the little pot containing the excrementary detergent he had been using to remove the grease from his body. Soap has superseded it now all through the country, but one must remember that before the white man came there was no soap nor knowledge of how to make it, and let that remembrance temper one's disgust. The men drew on some garments, the fire was dampened down, and the place was ready.

I do not think women are commonly admitted to the Kazhîme at all, but at my request they were presently allowed to gather at the inside of the entrance, and by the mouth of an excellent interpreter I spoke to the strange audience in this strange gathering-place. Now

DOCTOR LOOMIS VACCINATING NATIVES ON THE YUKON.

and then the dying embers lit up the savage surroundings with a lurid glare which was reflected from the column of smoke upon the dusky faces of the assembly. There was an indescribable odour, ancient and fish-like, mildewed and sudorific, that was almost overpowering at first but that one gradually grew accustomed to. It was fitting scene for witchcraft and ghoulish rites, and I wondered what pagan mysteries had last been celebrated there, what wild sorceries it would next witness. Then all at once while I was speaking there came to my mind the recollection of the subterranean stable in which one of the realistic modern painters has placed the nativity of our Lord. There were the same heavy beams of rough-hewn timber, the same general grime and gloom, the same half-clad, simple-minded, wondering folk grouped at the entrance; and I hailed the resemblance as of happy augury. I dare say that most memorable stable did not smell any too sweet.

It is so foolishly easy to be scornful of primitive people, to sweep them aside with a contemptuous epithet or two as unworthy a white man's notice. I have heard a hoodlum from the slums of San Francisco (and not London or Paris can produce worse) speak in such way of the Yukon Indian, and I once heard a gentleman of education from the East say that he did not know what dirt was until he had visited some native villages of Alaska. Yet I learned afterwards that this man owned tenements in the slums of New York.

I do not think I like dirt more than others and I am engaged in a ceaseless campaign against it, but there is a

certain snobbish consciousness of cleanliness that I grow very wearied with. If "Kind hearts are more than coronets and simple faith than Norman blood," so, we were told long ago, are they more than the washing of hands and the cleansing of pots and platters; and if the cherishing of a scrupulously clean habit in all things give rise to a feeling of large superiority, then I think that for those so unfortunate in their environment as to be almost unavoidably debarred therefrom, or in their ignorance as to be indifferent or even disinclined thereto, it should produce a correspondingly large compassion instead of mere scorn and contempt.

Aside from this particular matter, I find myself perhaps too easily vexed by the calm assumption of the infinite distance that separates the Indian from the white man, merely because he is a white man. I am no foe to racial distinctions any more than I am to social distinctions, and certainly no friend to the admixture of bloods; I do not view with complacency the solution of racial problems by the absorption of the "lesser breeds" into the overwhelming white race; I hate the thing even though I cannot shut my eyes to it. I do not see why different races should not perpetuate themselves, with their special cultures and their special tongues; and I think the world will be a much less interesting world, and not on that score one whit the better world, when all the little peoples shall have been absorbed, all picturesque distinction of custom and costume broken down, and a thousand vigorous, elastic, indigenous languages superseded by "pidgin English." From some points of

view the vaunted "march of civilisation" is to me a mere ape's march that leads nowhere.

The plaint of the teachers printed in the annual reports of the government schools in Alaska is loud and long that they cannot force the English language down the throats of their Indian scholars as the common speech, and it is the evident policy of the Bureau of Education to use every possible means of stamping out the native tongues. Yet it appears that there can be a great deal of stamping without much stamping out. One teacher writes in the 1914–15 Bulletin: "We endeavored to overcome the Hydah tongue by adopting the slogan, 'Hydaburg an English-speaking town in five years.'" One notices the name they have fixed upon the village of these Haida Indians—the bravest and hardiest natives of the southeastern coast they used to be counted, as well as the most skilful artificers—with no more than a passing regret at the making of a new hybrid at the very time St. Petersburg was rejecting its alien suffix, but the thought of going through its streets shouting out a thing like that gives one pause! One recalls that "Bannochar's *groans* to our slogan replied," in Sir Walter Scott's "Hail to the Chief," and is not surprised to learn later in an interesting and otherwise unusually intelligent report that "notwithstanding all the emphasis we put upon the use of English, we were not able to get the school children in their own conversation to adopt it."

Poor little Haidas!—is it any wonder that children at play, escaped from the confinement of the classroom, with that free, bold blood in their veins, should prefer

to chatter and shout their mother tongue rather than twist their mouths around the unaccustomed combinations of consonants with which English bristles? The fetters of a strange tongue may be endured in the schoolroom, but how can there be relaxation and recreation until they be thrown off?

To my mind the policy is unwise and futile. It is probable that the English speech will prevail over the native speech of these peoples by natural process, though in many places it will be a long time yet and I cannot see to save my life why it is so devoutly to be wished; but there is no sort of advantage in seeking to expedite the process beyond its natural rate, nor in repressing the Indian tongue by speaking contemptuously of it, and, as far as may be, proscribing its use. It smacks too much of the Prussians in Poland and, while it may enlist some "smart-Alec" youths who like to feel themselves superior to their elders, will arouse the latent conservatism of the race to a deliberate retention of what might otherwise unconsciously lapse. Such a course is, indeed, not unlikely to perpetuate the tongues.

There has been a government school for some years now on the Chageluk Slough, and I suppose there is the same effort to make the children speak English. I am not sure if it were the second or the third of the teachers (they change every year) who announced in my hearing that the teacher and his wife "*has came*"; and my mission-bred native boy, after some talk with him, puzzled with his ungrammatical speech, said: "I think he must be some sort of foreigner, he talks broken English."

And this man was come to stamp out the native tongue and substitute his own gibberish! It is fair to say that I think there was some sort of special agricultural capability for which he was selected, but it remains that he was a duly commissioned government school-teacher with all the classroom work to do.

I am far from citing this man as typical of the teachers sent to such work by the Bureau of Education; on the contrary, he was the extreme case; and I am not unaware of the difficulty of getting men and women of culture to undertake the life of solitary exile which it involves. We have had our own troubles in securing workers, our own incompetents, even perhaps our own illiterates, though we have not set these last at school-teaching. But I think there is still too ready an assumption that anybody can teach native primary schools; too ready a dispensing with the special training as well as the general culture which it really demands if it is to be done with efficiency and broad human sympathy. Let me hasten to add that I have known those amongst the teachers of the bureau who brought all the general and special qualities and training of mind and character required, and who brought also a love and a devotion that no money can hire.*

The difference between the Indian and the white man, aside from the colour of the skin, is vastly more a matter of early training and environment than of racial

*Let me add also that the man at present (1917) engaged in the school work at this place seems to be quite exceptionally fitted for his task by the common report of those acquainted with him and what he is doing.

inheritance. I have seen Indian boys, mission-bred, who were more intelligent, more advanced in the usual subjects of study, better-mannered, kindlier, and higher-minded, than the average white boy of similar years—and who spoke much better English, besides speaking their native tongue. I do not mean that they were better in these respects than the average white boy would have been had he had the same training; I mean just what I say. And I would venture that if I might take my pick of the boys of this fish-eating Chageluk village, whose fathers lay around the shelves of the sweat-bath availing themselves of the ammoniacal constituents of their own urine to remove the grease from their bodies; that if I might take my pick of the young boys of this village and submit the one selected to the same mission regimen—physical, mental, and moral—there would be good chance of the production of a man who should excel in all that makes and adorns real manhood.

The waterway that we are pursuing is tortuous and the scenery tame. Densely wooded banks bar any prospect beyond them, and mile after mile we wind amidst the willows and the cottonwood and the spruce. Occasionally a hill rises to break the monotony; here and there a fish camp appears, here and there a little native village. The current is not swift, and the launch makes good time against it, her engines rejoicing, as I always think, in the clean water that is circulating through them.

Just at the mouth of the Innoko, when we have traversed nigh an hundred miles of this placid and monotonous waterway, we come to the most important village on

the slough—small enough at that—rejoicing in the name of Hólogochâket. It has the distinction of a little chapel, built by the people when the Russian priests used to visit the place, now many years since, surmounted by the distinctive triple cross; and there is a trader's store.

Opposite this place we turn round an island into the Innokó River and pursue it for twenty miles, until a tiny village named Dementi's is reached. The Innoko is a beautiful stream, with well-wooded rocky banks diversified with birch and spruce; sometimes with grassy, lawn-like slopes set so regularly with single trees that a park-like effect is produced and for a few minutes we might almost be on the banks of the Thames. The Innoko is of some importance commercially since it has the mining-camp of Ophir near its headwaters, but its chief importance comes to it with its tributary, the Yetnakatna, or Iditarod.

A mile or two above Dementi's the launch leaves the Innoko and enters at once upon a river and a region different from any other in the interior of Alaska. Here is a wide, flat valley totally devoid of trees, and for eighty or an hundred miles the river flows sluggishly through it with banks as even and regular as the banks of a canal, and a course so tortuous that one is puzzled for a comparison. It makes ox-bows from side to side for miles and miles and then twists itself almost down to its mouth again and takes a fresh start and makes new ox-bows over another part of the plain and comes back once more to repeat the thing. We see the smoke-stack of a steamboat a few hundred yards off that seems to be travelling

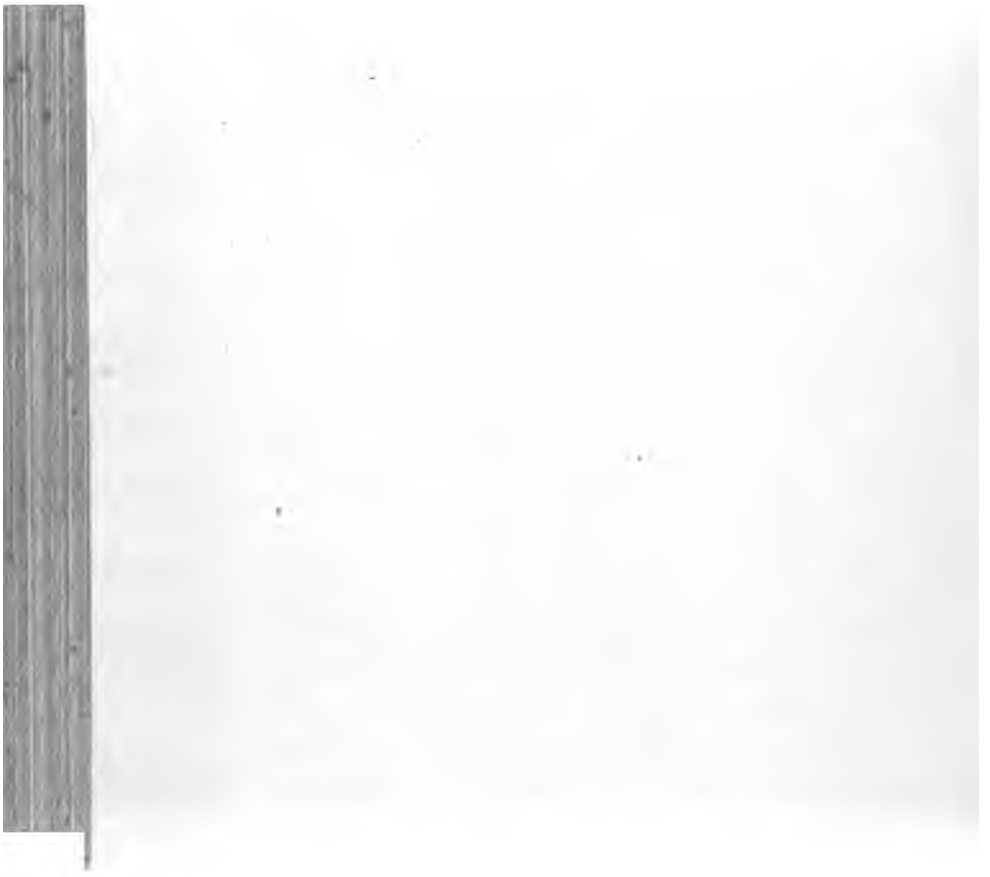
in our own direction, but after an hour or so it is encountered going in the opposite direction; or it may appear to be coming full steam towards us and later in the day may overtake us on our own journey.

There is no ordinary word adequate to the tortuousness of this stream, but there is a word that Doctor Johnson used that I always think of in connection with it. He spoke of the *anfractuosities* of the human mind, and if I speak of the anfractuosities of the Iditarod it is because I know of nothing except the human mind that is so winding, so crooked, so astonishingly and exasperatingly devious. Perhaps the steamboat men, whose usually ample supply of language is insufficient to do justice to the crookedness of the Iditarod, may find this word of help in relieving their feelings.

Far away as we are yet from the region of the coast, this great flat through which the Iditarod coils and twists partakes of the nature of the tundra country, and the river itself resembles a tundra stream. There is the same total absence of trees, the same attractive and delusive grass-land as far as the eye can see—delusive because so soon as foot is set upon it it is found to be swamp—the same low, even, sharply defined banks as though the bed had been artificially excavated. A bright beautiful day of warm sunshine, the sky flecked with fleecy clouds, the clear yellow water sparkling, leaves a very pleasant recollection behind of the lower Iditarod.

I spoke of the sluggishness of the current, and, of course, only a sluggish stream would follow such a channel; a brisker one would cut through many a place where

On the Innoko River.



but a few feet of earth separates the outward curve of one bend from the inward curve of another. Coming down the river with the bishop aboard one summer evening, a score or so of miles perhaps from its mouth, the need of a slight adjustment of the machinery caused us to tie up for a while to the bank. It was dark and a breeze rippled the surface of the water. When the launch was started again the boy at the wheel set her head in a direction that I was sure was up-stream, but that he was sure was down-stream. No one had taken special notice of the bank when we tied up and the wind prevented observation of the very slight current. A controversy followed in which the four people on board were evenly divided. The bishop as owner and I as master of the craft held opposite opinions decidedly and pertinaciously. We threw chips on the water, but they gave no sign, for the wind was stronger than the current, and the merry-go-round of a course we had followed for hours had driven all sense of direction out of our heads; nor, indeed, would such sense have helped in the least since the immediate direction of the river is so rarely the real. By this time it grew dark, and since the puzzle was still unsolved we decided to tie up for the night, although we had intended running to Anvik without stopping. The amusing part of the incident is that no one save the boy who rose early and started the launch before we in the cabin were up, knew which side had been in the right the evening before—and he laughingly refused to tell. I have always felt confident, however, that it was the realisation of his error that sealed his lips.

In the high water of the early summer this whole region becomes an inland sea, and amusing stories are told of the fleet of craft of every conceivable shape and kind—stern-wheelers, paddle-wheelers, screw-propellers—that "rushed" in from Fairbanks and every Yukon town at the opening of navigation in 1910 and knew not whither to steer when they reached this wide expanse of water. At length came along a "company" steamboat that had made the trip once before, and the heterogeneous flotilla fell in line behind.

I saw many of those boats on the Yukon bound for the Iditarod the summer of the rush to the new goldfield—gasolene-boats, poling-boats, rowboats, home-made steamboats with prospecting boilers and hoist-engines rudely installed, to be removed and used for mining when the diggings were reached. Full of men and household effects and supplies, sometimes with a team of dogs and a sled on deck, sometimes with a loud-mouthed phonograph playing popular airs, they passed along, in hope and glee, to the new Eldorado. There is a freshness, a vivacity about these stampedes, whether on the water or over the ice, that is exceedingly attractive. Grizzled "rough-necks," the veterans of a score of similar adventures, plunge in once more with all the sanguine spirit of the young men who accompany them; the word-of-mouth reports from the new diggings grow more alluring with every repetition; this time success is certain; the long-expected chance has come. And there is about these old-timers a capability, an ingenuity, a clever utilisation of meagre resources, an elastic adap-

AN INNOKO RIVER MOTHER.

tation of means to ends, and an equanimity of patient endurance that arouses new surprise and admiration continually. The sordidness of the underlying motive is lost in admiration of the qualities it evokes; is lost in the men themselves in the sheer zest of new adventure. Here is the zeal that no length of experience can dampen; the vision that no past disappointment can dull. And they float on, dogs barking, graphophone shrieking, two-cycle motors, that explode frequently but not always, chugging their ragtime, they float on down the river, out of sight round the bend, to that region "over the hills and far away" whence come the latest stories of treasure hid in the earth.

But the stampede on the first water from other parts of the interior to the Iditarod in the summer of 1910 was nothing to the rush from the outside that followed when the ice had gone out of Lake Lebarge and the steamboats ran. The magazines of the winter before had just discovered "The Incalculable Riches of Alaska"; a spectacular shipment of gold-dust had gone across country to Seward and had thence been conveyed with drums and trumpets into Seattle; the steamship companies and the newspapers had worked hand in hand in the usual way. So eager were the people for passage that they crowded the boats long after all accommodation was exhausted. It was said that at one time three thousand people were on their way between Seattle and Dawson, which was doubtless an exaggeration, for these rumours always fatten themselves upon the excitement they create, but that number is not too

great for those who went into the Iditarod that summer.

I was at Eagle when the first through steamboats arrived and was much amused at one incident. A party of men came from one of the boats with a complaint to the United States commissioner. They had paid first-class passage, notwithstanding which they were made to sleep in "standees" (tier upon tier) on a barge. This they were willing to submit to, but since leaving Dawson the steamboat people had stabled horses between the standees, and they resented the presence of the horses and demanded their removal. One man said that a horse's tail switched him across the face in the night and nearly blinded him; another said that a horse had knocked down his trousers and stamped on them, and he produced the broken handle of a pocket-knife in evidence. But there was no redress in law, nor do I think there was need. These men would not wait, they insisted on crowding a boat already full—and they had to take things as they found them. No old-timer would have said a word about it. He would probably have done something to relieve the situation, would have hit upon some expedient to make things more tolerable, but he would never have gone whining to a magistrate about a congestion of which he was himself the cause. There was a good deal more need of horses in the Iditarod just then than there was of more people.

In comfort or discomfort, by one means or another, they reached their eagerly desired destination, each ready for his share of "The Incalculable Riches" aforesaid, and

that summer Iditarod City was the largest city of Alaska, and the next winter it was estimated that upwards of a thousand men were living on one meal a day.

When perhaps an hundred miles of anfractuosities has been passed the anfractuousness ceases and the Iditarod becomes only somewhat more sinuous than an ordinary river. The banks rise up from the water, become broken and clothed with trees, rocks presently appear, and rolling hills. The singular tundra character of the country is gone, and the familiar general appearance of interior Alaska and of interior Alaska's rivers is resumed for nearly another hundred miles to Dikeman.

This place was established at the time of the "rush" as a general depot and warehouse point, for, save at the highest stages of water, this is the head of steamboat navigation. It is nothing more than a transhipment-place for the mines which are yet eighty or ninety miles away, and it shared with Iditarod City the common fate of overbuilding, so that the banks are lined with empty cabins.

I know of nothing which illustrates better the resourcefulness and ingenuity of the white men of Alaska than the way in which the difficulties of navigating the Iditarod between Dikeman and Iditarod City were overcome. The river is not really navigable at all in any "outside" sense of that term. It is a mountain stream in which swift shallow reaches are separated by bars and riffles from deep pools, and in the heat of summer these swift shallow reaches carry only a few inches of water and the bars protrude. At the lowest stage of

water all traffic is necessarily intermitted, but during much the greater part of the season the boats ply back and forth with freight and passengers.

Swift, shallow water calls for powerful, light-draught boats, and I think the development of such craft was probably carried further on the upper Iditarod than it has ever been anywhere else; for the reason that a commerce based upon the product of rich gold-mines can stand a greater expense of operation than any other, except perhaps a commerce based upon the product of rich diamond-mines.

Will the output stand the coast of operation?—that is the only question; if it will, then however great that cost may be, in the language of the country there is only one thing to say, "Go to it!" Rich placer deposits like those, say, of Bonanza Creek in the Klondike, would stand the cost of operation had all supplies to be brought in by aeroplanes and dirigible balloons.

So the "transportation men" went to it. They constructed the lightest, shallowest-draught flat-bottomed boats ever made, drawing but two or three inches of water, and installed therein powerful automobile engines that turned stern paddle-wheels at a high rate of speed, and the paddle-wheels did but touch the surface of the water. These boats pushed barges that carried the freight, drawing little more with their loads than the boats drew with their machinery. By the most skilful handling, by loading and unloading, by jockeying and jack-knifing, mile by mile, the freights were pushed up the river, and sometimes a couple of horses were carried

THE BEGINNINGS OF IDITAROD CITY.

on a barge that when all else failed it might be dragged over a riffle by main force. The worst parts of the river were wing-dammed, that what water there was might be thrust into one channel.

The screw-propeller men were put to it, as well as the stern-wheel men. I do not know that the "knuckle-joint" between shaft and propeller was invented on the Iditarod, but I never saw it before. By this device the propeller can be drawn up, half out or wholly out of the water at will; the former when forging up-stream over very shallow places, and the latter when drifting down-stream over riffles.

The *Pelican* draws her full sixteen inches of water, and her tunnel stern forbids a knuckle-joint. Once, going up as far as Dikeman, she had to turn back, since she could not wait indefinitely for a rise. Once she was stalled for ten days twenty miles below Iditarod City until rain swelled the stream to her draught. More than once a friendly line from a lighter-draught boat has pulled her off a sand-bar. Then we had long oak levers with flat metal-bound ends made so that we can put on the rubber boots and get out in the water and pry her bodily off bars with them.

In the first two or three summers of her life her poor bottom was gouged and torn and scarred by gravel from Lake Lebarge to the Koyukuk and the Iditarod, but of late years we do not get aground so much.

One whole season recently she did not touch bottom from the time she was launched to the time she was pulled out; but I have become chary of talking about it

and really think that I had better not have mentioned it at all. At the opening of the next season, with the bishop and a guest aboard, I was boasting of it and pluming myself upon it, with the wheel in my hands, running down the broad Yukon; and while the vaunts were yet on my lips, bang!—she went so hard upon a sand-bar that it took an hour or more to get her off. Pride sometimes comes *just* before a fall, and constant watchfulness is the price of constant floatage on the Yukon.

Iditarod City had one season of feverish building and one season of fairly remunerative usufruct thereof, and then it collapsed. During those two years it was, I think, the largest town of interior Alaska. Tradesmen of all kinds from Dawson, from Fairbanks, from Nome, from the "outside," came hither with stocks of merchandise; sawmills were set up, and since local timber is scarce and poor their output was supplemented by large lumber shipments from other places, and the town sprang out of mud lying upon ice (such is its foundation) in a few weeks' time; chiefly of wood and tar-paper with sawdust for insulation from the cold. Two banks were established, and two newspapers, and pretty soon the inevitable "Chamber of Commerce" was organised and a new full-fledged mining-camp town sprang to life. The saloons, the gamblers, and the prostitutes were, of course, amongst the first arrivals.

There was only one creek of any richness—Flat Creek, about ten miles away—and that was not only rich but shallow, so that gold was soon forthcoming.

IDITAROD CITY AND THE IDITAROD RIVER.

But a creek that is rich and shallow is precisely the best creek for dredging, and that word had ominous significance for Iditarod City. A little town grew up at the mouth of Flat Creek, following the usual course of mining-camps which provides an immediate town, and, so to speak, an ultimate town; but that Iditarod City might not lose more than was unavoidable, a tram-line was constructed across the hills between the two.

The next summer the bishop sent me in to build a hospital, and the Guggenheims sent in experts to report on the outlook for dredging. Two nurses and a full hospital equipment arrived a little later, and the same boat brought diamond drills for dredge-prospecting. I tramped the niggerheads and the muck from claim to claim, from creek to creek (for there were some other creeks), week after week, raising money, and the Guggenheim people took options on the whole of Flat Creek, and cross-cut every claim with the diamond drills in their customary thorough way.

Some of my experiences that hot, mosquito-laden summer were interesting, could they with any face be dragged into a book about river cruises. Asking for money is not the pleasantest work in the world, even when it is to build that necessary thing—a hospital; and tramping through thick tenacious mud, or jumping from niggerhead to niggerhead all day long is fatiguing. I envied my pet Malamute "Muk," who inhabited the after-deck of the launch that summer and several others, and accompanied me on my tramps, because his light weight enabled him to skip over bog that would not carry me;

and four legs are a great advantage over two in the mere matter of locomotion—there is no doubt about that. Muk grew rolling fat on that excursion, for while I was addressing the men on a claim as they ate their dinner or supper (the only chance of getting them all together) the cooks would feed the handsome, ingratiating little beast. He had bones buried all over Flat Creek away down to Discovery on Otter Creek, and was so thoroughly spoiled that when I got back to Iditarod City I had to give him a good thrashing and put him on the chain for a week.

It was fortunate for the undertaking that all my addresses were not as barren as the one that I delivered to the largest gang of men on the creek. The proprietors of the claim were absent, but the foreman gave me permission to ask for contributions readily enough, and I took my stand between the long tables and began my plea to the usual accompaniment of clattering knives and forks.

The reader can divine for himself the general tenor of the talk, which did not vary much. Here in the camp were several thousand men engaged in hazardous work and no place where an injured or sick person might be taken care of. Last week I had buried a man killed by the caving of an open cut; at this time there was a man with a broken leg lying at a road-house for lack of any other place; the doctors in the camp were hampered by that lack; no man knew whether or not he would be the next. The bishop had sent a nurse and a complete hospital outfit; all we wanted from the camp was enough

money to put up the building; it was not a money-making affair; it was an attempt to help the men of the camp; the storekeepers and the claim-owners had contributed, now it was up to the hands to do their part. There was no scope for eloquence and no attempt at it, but I made the plea as earnestly as I could. That I did not attract any one's particular attention gave me no concern, for the main business was eating, and a man can eat and listen without giving much evidence of the latter. But towards the end I intercepted an impudent grin from one waiter at the tables to another, and was presently conscious of a group in the door behind me that appeared hugely amused, and I grew uneasy. The substantial meal was hastily bolted and one by one the men got up and left without a word to me or any notice of the plea I had made, and it was only when they had gone and the tables were being cleared that I learned that they were all Montenegrins and that not one amongst them understood any English! O. Henry speaks of some one who "listened with incomprehension and respect"; these men listened with the former only, if they may be said to have listened at all.

When my immediate chagrin was over I could join heartily in the laugh against myself, and I think the claim-owners when they returned were the more liberal for the joke.

With the help of the women of Iditarod City, I managed to secure three thousand dollars, and that sufficed to purchase a suitable house already built that happened to be offered at an advantageous price, though not to

complete the payment. Almost simultaneously the drill-prospecting was finished (it is said that fifty thousand dollars was spent upon it), and the Guggenheim corporation threw up all the options it had bought because the ground did not justify the very high prices asked.

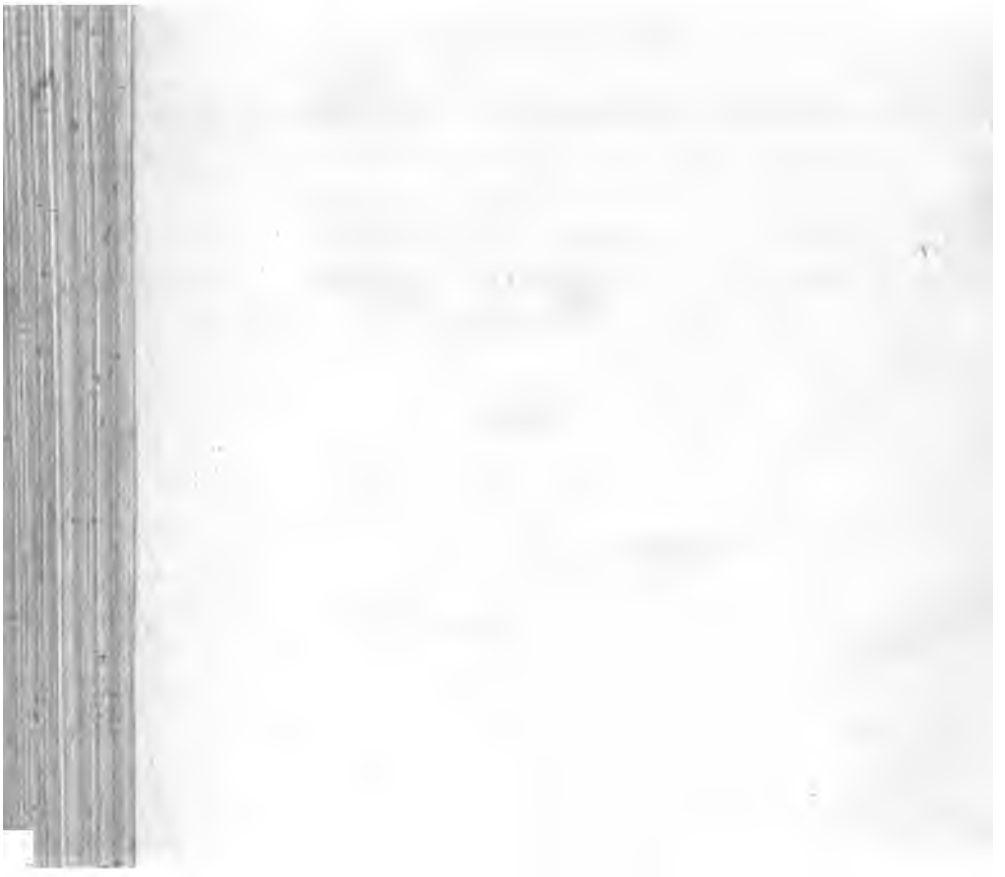
And just then came a telegram from Fort Yukon that smallpox had broken out at the Rampart House and a quarantine was established at the mouth of the Porcupine and my return was urged. An earlier outbreak at Dawson (whence it was carried to the Rampart House) had given me warning, and I had telegraphed to New York for vaccine-points and knew they awaited me at Anvik.

So, the hospital housed and started, I left on the *Pelican* in a hurry, and we bumped and dragged our way over the bars to Dikeman, for the water was low, and battered our propeller and jarred loose its stern bearing so badly in getting through that she rattled and shook like an old Ford car all the way to Anvik. Here I picked up not only the vaccine-points but a physician —Doctor Loomis, on his way outside from Tanana— and, impressing him into renewed service, cruised up the eight hundred miles to Fort Yukon, stopping at every native camp along the whole journey and vaccinating every one. Including those vaccinated by Doctor Burke at Fort Yukon and the nurses at the various mission stations, upwards of three thousand natives received such protection against smallpox as vaccination affords during this summer (1911).

But to be done with the chronicle of the Iditarod as

On the Iditarod River.

we leave it. The next summer, 1912, the Guggenheim agents returned and were able to buy at their own prices (which must have been fair or the owners would not have sold) the claims they had declined a year before. Dredges were installed on Flat Creek and are still operating; but the Guggenheim purchase meant the decay of Iditarod City, for as I have previously pointed out, a dredge takes the place of several hundred men so far as work is concerned, but not in the upkeep of a town's catering and merchandising. Such business as remained centred at Flat City, and when last I visited it Iditarod City was largely deserted. There was, indeed, a perfect exodus of tradesmen the next summer, and rather than carry their stocks away again at high freight rates, goods were sold cheaper than I ever saw them sold in interior Alaska before or since.



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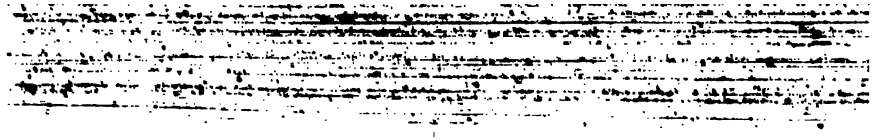

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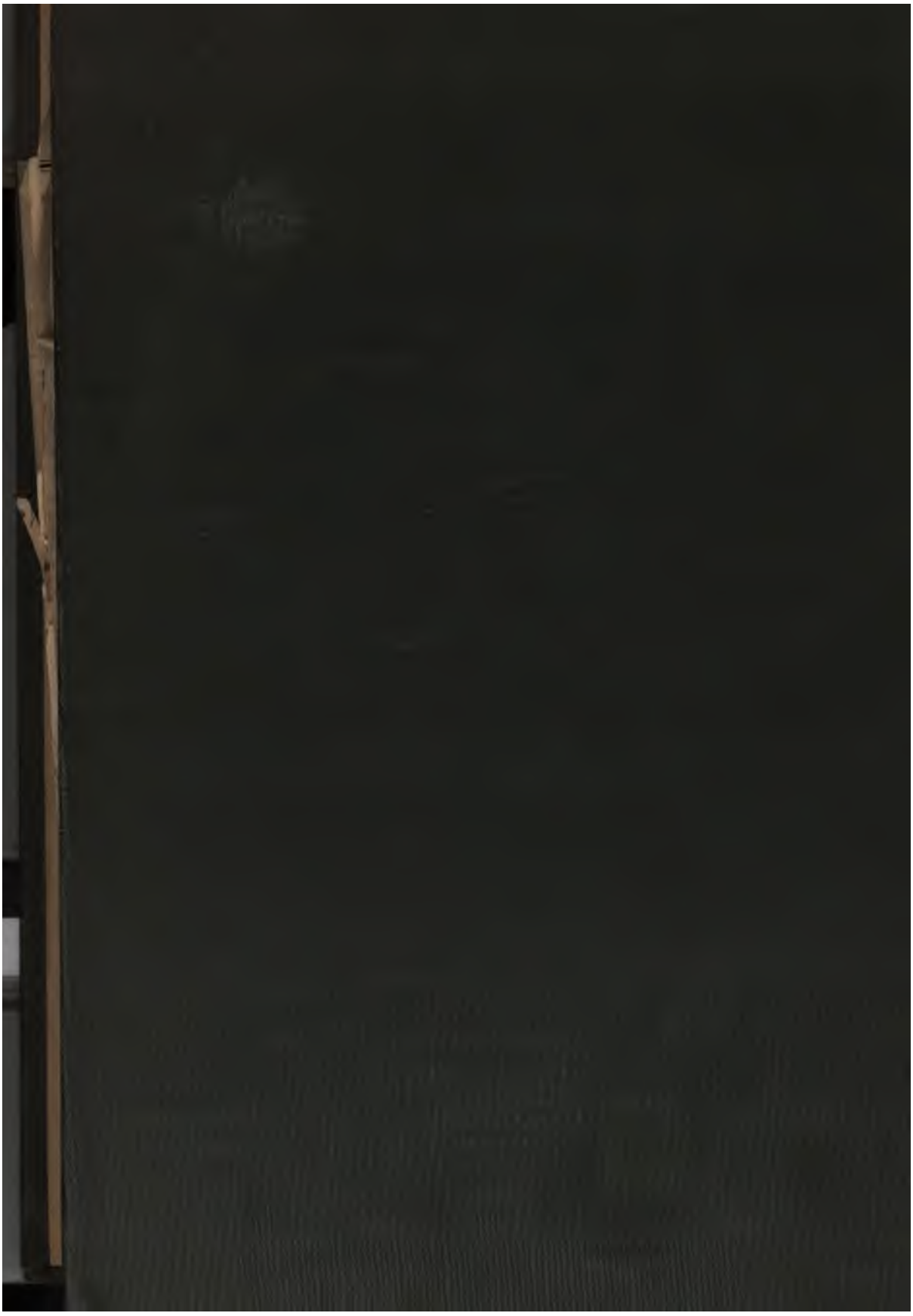
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